

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XLVI.

SATURDAY, APRIL 18, 1885.

No. 16.

ORIGINAL LECTURES.

CHRONIC INTERSTITIAL NEPHRITIS (CONTRACTING KIDNEY).

A Clinical Lecture, delivered March 12, 1885.

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LECTURE II.

THE case before us presented, you recollect, another important sign—*i. e.*, albuminuric retinitis. There are two entirely different causes for the loss of sight met with in renal diseases; one cerebral, coming, and perhaps going, suddenly, unattended by any ocular lesion, and closely connected with the condition which may lead to convulsions; the other, developing more slowly perhaps, never becoming extreme, perhaps being detected almost accidentally, and depending on changes taking place in the nerves and retina. These changes have been often described and figured, and you may see here (*Boston City Hospital Reports*, Second Series) a plate drawn by Dr. Wadsworth from such a case. They are not, however, absolutely characteristic, although sufficiently so, when found in a case not known to be otherwise diseased, imperatively to demand examination of the renal and cardiac condition. It has happened not infrequently that these changes have occurred at so early a period as to be the first intimations of the approach of Bright's disease.

An erroneous diagnosis may for a time be entertained on the basis of retinitis and an accidental albuminuria.

Last Spring I saw a middle-aged man, who, on account of failing sight and severe headache on the right side, consulted his own physician and two oculists. The condition of the retina, with white patches and extravasation of blood, led to an examination of the urine, which was found to contain albumen. The left eye was, however, normal. When I saw him he had intense headache, the eye was tense and prominent, with dilated pupil and a mere remnant of vision; the urine contained a small amount of albumen, had a specific gravity of 1025, with a very few transparent casts mostly mucous, beside strings of mucus. There were no localized paralyses, but the severe pain led me to suspect an intracranial tumor, so that I administered iodide of potassium. In a few days, however, the pain became so intense that after a consultation Dr. Derby removed the eye. There was no morbid growth therein, or behind it in the orbit.

Several months afterward he appeared nearly well, the urine being of specific gravity 1018, with still a slight trace of albumen, and a few small transparent casts. He thought he was passing a considerable quantity of urine, but according to more detailed statements it was not in excess of 1500 c. c.

The absence of heart signs, of exaggerated tension, of vomiting, the disappearance of the headache after re-

moval of the eye, and the freedom of the other retina from lesion, as well as the normal quantity and specific gravity of the urine, made me consider this case as an ophthalmitis of unknown origin rather than albuminuric retinitis, notwithstanding the presence of albumen and a few transparent casts. I shall, however, be much interested in his future history.

The knowledge of the existence of retinitis is a strong point in the diagnosis of nephritis, but does not definitely decide it to be of the interstitial form, although adding to the probability in that direction. The prognosis of the lesion of itself is not absolutely unfavorable. It may be recovered from independently of the general disease, but is usually closely connected with it.

You are aware of the intimate relationships which exist between cerebral and renal affections and which are of various kinds.

Headache is a very common symptom in these cases, and was at one time present in the one which has been serving as our text. Such a headache is often apparently independent of any cerebral lesion, and is spoken of as uræmic. I doubt the correctness of the name, if it is intended to signify that the pain is caused by an accumulation of urea in the blood. Bartels has shown, and some quantitative analyses made on the urines of patients in this service by Dr. Wood confirm the statement, that during the most of the period of interstitial nephritis the kidneys are amply sufficient to carry off all the urea that is made. The secreting structure of the kidney, like that of other organs, is more than necessary for ordinary needs, and may suffer considerable diminution, as by the ablation of one kidney or the partial destruction of both, before the obstruction to secretion begins.

What is the cause of this sort of headache we cannot say with positiveness, any more than we can with many other kinds, but when we recollect how prominent a part in the theory of headache has been played by supposed vaso-motor constriction and dilatation, it is quite as easy to refer it to the condition connected with more or less rigid arteries and increased tension, as to a poison circulating in the blood.

It may often be relieved by measures which appeal much more directly to nervous function than to the excretions, such, for instance, as caffeine, or a small dose of morphia, both of which act too quickly for their beneficial effects to be accounted for by the removal of any excrementitious substance. It might be said that the hot air bath relieves by eliminating substances by the skin which should normally pass off by the kidneys, and in some cases this is no doubt true, and the same remark will apply to pilocarpine, but it must be remembered that the extensive and intense determination of blood to the skin caused by these agencies, produces a notable fall in the arterial tension and may relieve independently of elimination. If we choose to call these headaches uræmic, we must recollect that in many instances we are indulging in a figure of speech which serves only to mark

their connection with renal disease, and does not accurately describe their true causation.

Cerebral hemorrhage is well known to be so frequently connected with interstitial nephritis, that this latter condition may be very strongly suspected to exist, even in default of other marked symptoms, when apoplexy, not dependent on heart disease, occurs in young or middle-aged persons. In one well-marked case of this kind an excessively severe headache partially relieved by morphine was followed by a rapidly developing left hemiplegia. After death, some four months later, beside the small kidneys, large heart, and degenerated arteries, the brain was found unusually firm with small, cyst-like cavities in the white cerebral substance, and reddish-brown spots (old hemorrhages) in the corpora striata.

When you are asked, as you undoubtedly will be, why Bright's disease is so much more common now than formerly, I think you will be justified in attributing a part of the apparent increase to a transfer of a considerable number of cases from the headings, apoplexy, heart disease, etc., under which they would have been registered, to that of the now so popular nephritis.

When we remember that some organic cerebral diseases may give rise to certain symptoms supposed to be characteristic of nephritis, such as albumen, a few casts, and even polyuria, it can be easily understood that difficulties in diagnosis may arise requiring considerable attention to solve. The decision must be made largely, I think, by a careful search for further symptoms of either disease, as, for instance, constancy of the headache in one locality, localized paralyses as of the ocular or facial muscles, localized convulsive movements, or paræsthesiæ, pointing to cerebral disease; or, on the other hand, hypertrophy of the heart, slight dropsy and especially casts of the kind which indicate serious inroads upon the secreting structure of the kidney, epithelial, fibrinous, and fatty, instead of purely hyaline, pointing to the nephritis and arterial sclerosis as the primary troubles, and the cerebral symptoms as secondary.

There may be cases, however, of severe nervous headaches with vomiting, in which the cerebral disturbance is not constant and is apparently not dependent upon any special change in the condition or function of the kidney, where we may doubt, even in the presence of albumen and casts, exactly how intimate a connection exists between them.

Among other nervous symptoms there is one which some of you have seen to perfection in our patient, in the ward, since he was before the class. You know how common a symptom dyspnoea is in such cases. It may be due to effusion of serum into the pleuræ (hydrothorax), into the lung tissue (œdema), or to congestion of the lungs when the heart is failing. There is, however, a purely nervous dyspnoea, and one form of this is seen in our patient as the so-called Cheyne-Stokes respiration. This is a rhythmical rise and fall of the intensity of respiration, so that if we begin with the period, of apnoea, the respirations, at first barely perceptible, grow stronger and stronger until, after reaching the maximum of dyspnoea (which is not necessarily intense), they gradually fade away again and cease. The complete cycle generally takes somewhere in the neighborhood of a minute, the period of apnoea lasting for from ten to twenty or more seconds. Singularly enough the pulse, during these changes, does not alter its rate or

force. This breathing is not all the time present in our patient, but I presume denotes "the beginning of the end."

This symptom does not denote, as was at one time supposed, fatty degeneration of the heart, but may be present with that as with other cardiac lesions. It is not uncommon in cerebral disease, and, as you see here and will probably see in other cases, it is not at all an infrequent accompaniment of interstitial nephritis. Unless I am mistaken, I have seen something of the kind, but with shorter intervals (four or five respirations between the pauses), in a person sleeping heavily under opium.

Its mechanism is not clear, but for an exposition of various theories as well as one of his own, you may consult the recent work of Dr. Bramwell on *Diseases of the Heart*. Whatever the details of its production may be, its meaning in general is diminished sensibility of the respiratory centre in the medulla oblongata, and it is usually a sign of very evil significance. It is not, however, of absolutely fatal import, or the immediate forerunner of death. You may see it during the early days of a cerebral hemiplegia in a patient who lives for months afterward. A woman told me that her husband, at a time when he was going into town every day to his business, used to "hold his breath so long" when asleep that it frightened her. This was, however, not many weeks before his death with atrophied kidneys and hypertrophied heart; and I always supposed that this "holding of the breath" was Cheyne-Stokes respiration. He certainly had it afterwards, but for a few days before his death the respiration became regular, though he was completely comatose. At some times it seems to be accompanied with very little disturbance of any kind, but at others the period of commencing respiration is attended with uneasy movements and manifestations of distress.

Convulsions, which you may have wondered not to hear me say more about, as of the nervous symptoms of interstitial nephritis, are more common in parenchymatous nephritis, and I shall speak of them in that connection should a suitable case occur during my term of service.

True epileptic convulsions may occur with interstitial nephritis, as a mere accidental coincidence and would be very likely to lead to a diagnosis of so-called uræmia in a case in which nothing was known of previous history.

A man aged about 52, was for two or three years in the habit of coming to the hospital after a "fit." He used to appear rather stupid, as often happens after an epileptic convulsion, but went out after a few days in his usual condition of health. He said he had the fits ever since childhood, and professed to be well in the intervals. Whenever his urine was examined it was found to be of low specific gravity, and to contain albumen and casts. The area of cardiac dulness was increased, and there was a systolic murmur at the apex. He finally entered for dyspnoea and died here. He was found to have pericarditis, hypertrophy of the heart with mitral stenosis (not excessive), and atrophied kidneys.

In further illustration of interstitial nephritis at an earlier stage, let me call your attention to this German, a beer drinker, aged 45. Four years ago his eyesight failed, but for this we find corneal opacities to account. Last year his legs were painful and swollen. Further

questioning as to the exact location and character of the swelling makes it probable that there was œdema in addition to some genuine rheumatic swelling, since it existed between the joints, as well as at them. For a year he has had to get up in the night to pass urine. This is a circumstance which should lead to further investigation, but is not to be taken as proof positive of increased quantity of urine, as it may be due to prostatic irritation or even a mere nervous trick. Measurement is the proper test for polyuria, and, so far as we can make out, this man passes a little above the average. It is of specific gravity from 1007½ to 1010, contains a trace of albumen, a very little free blood, with hyaline and granular casts, and a little fatty epithelium.

The area of the heart's dulness is a little increased to the left, with rather a strong impulse and a slight systolic soufflé at the apex. The tracing shows rather a slight elevation of the tidal wave, but a gradual and almost unbroken line of descent—that is, considerable resistance to the passage of the blood out of the vessels without a powerful action of the heart; a sort of relative high tension, though not of the most characteristic kind. He has white spots in both retinæ, but no hemorrhages. He came in for pain and swelling in his legs which symptoms soon disappeared, probably under the influence of rest and warmth, as he has had no very active treatment. He will go out in a few days with cautions as to keeping warm, not taking too much beer, and keeping his bowels in good order.

This coincidence of interstitial nephritis with rheumatism is not rare, but is perhaps not so intimate as that with gout, of which we in this country see much less, but to which the English writers on the subject attach much importance in the etiology of the contracting kidney.

Our next case I certainly should not pick out as a typical one to illustrate a clinical lecture, but as the patient is here, we will see how far it belongs to the class we have been talking about. It is that of a man, J. P., aged 53, who has experienced many vicissitudes and endured hardships. He has been a drinker, but is said not to have indulged much of later years. Two months ago he began to vomit, usually in the morning before breakfast, sometimes vomiting his breakfast, seldom his dinner or supper, never blood. Headache and failing eyesight for two months. His urine of specific gravity 1011, 1014; very slightly increased in quantity (about 60 ounces per diem), with a very large trace of albumen. Hyaline, fine and brown granular casts, and some free blood. He has hemorrhages in both retinæ; the heart's dulness terminates well within the nipple, and the impulse is barely perceptible. The sphygmograph shows nothing characteristic, certainly not high tension. He entered the hospital chiefly for weakness and "nervousness," and I suspected at first from his general appearance that alcoholism had a good deal to do with his condition. This suspicion I soon found to have little foundation. I must confess the diagnosis is not clear; the absence of cardiac enlargement (rather the contrary condition being present) and of increased tension, as well as the character of the urine; indicating a more active process, are strongly against the supposition of interstitial nephritis. It is true that the increased tension might have disappeared as the general nutrition and especially that of the heart became impaired under the influence of the long-continued vomiting, but this would

not have destroyed the signs of cardiac hypertrophy. On the other hand, the urine was not typical of that of advanced parenchymatous nephritis, and the absence of the slightest trace of dropsy would be strongly against this supposition. His appearance and the history of failing health for some years, will hardly allow us to consider it a case of acute disease. We have nothing definite, not even irregularity, to point to the heart, and if this organ were the principal seat of disease, we ought, by this time, to have dropsy and much more dyspnoea than he appears to suffer from.

POSTSCRIPT.—Since our last lecture two cases which have been before us have died. In one of them (J. P.) I regret that no autopsy could be obtained, so that we can add little to our deficient diagnosis. His urine became quite scanty and the vomiting, which had entirely disappeared after his entrance into the hospital, returned to a slighter extent. He became "nervous," not liking to be left alone and finally somewhat delirious. Notwithstanding the diminution in the urine, there was no dropsy whatever, and nothing which could be properly called uræmia, unless the excessively slow respiration unaccompanied by coma during the last few days of his life is to be accounted as such.

Three days before his death he had a severe attack of thoracic distress, and very loud to and fro, evidently pericardial, friction sounds were heard for the first time. There was no enlargement of the area of dulness either to right or left, or upwards; after the first attack it seemed to give him almost no trouble. At this time, or possibly a little before, a pulsation was noticed in the veins of the neck, especially on the right side.

I think we must regard the case as one of those exceptional ones in which interstitial nephritis, with very probably more or less parenchymatous superadded, is unaccompanied by cardiac hypertrophy—that it was a local, and not a general disease.

The other case was that (B. S.) which was our starting point in these lectures. His somnolence and stupor deepened until he died. The autopsy showed the kidneys to be in a condition of interstitial inflammation, being somewhat reduced in size, the surface irregular, although the capsule was not adherent. The cortical substance was not disproportionately diminished, but appeared more transparent than normal. The microscope showed patches of new cell formation throughout the cortical substance, but especially near the surface. There were casts in some of the tubes. The small arteries within the kidneys were thickened and in some places atheromatous. Everywhere throughout the body, so far as examined, the arteries were thickened, stiffened, and atheromatous. So extensive was the latter process that it could be observed in the little vessels, as large as a pin, on the surface of the brain. The coronary arteries were also much involved. The heart, especially the left ventricle, was hypertrophied, and the valves, although containing some yellowish patches, in every way competent. Notwithstanding their atheromatous condition, the coronary arteries contained no thrombi, and the muscle of the heart, with the exception of the tips of the papillary muscles so often affected, was everywhere free from fibrous or fatty degeneration.

We find then our former estimate of the case fully confirmed by this examination, and can realize that in-

terstitial nephritis, although present, was not the whole disease. The general arterial sclerosis was undoubtedly as important a factor as the not excessive destruction of kidney substance.

ORIGINAL ARTICLES.

DISINFECTANTS.¹

PRELIMINARY REPORTS OF THE COMMITTEE ON DISINFECTANTS OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

IX.

THE object of *disinfection* is to prevent the extension of infectious diseases by destroying the specific infectious material which gives rise to them. This is accomplished by the use of *disinfectants*.

There can be no partial disinfection of such material; either its infecting power is destroyed or it is not. In the latter case there is a failure to disinfect. Nor can there be any disinfection in the absence of infectious material.

It has been proved for several kinds of infectious material that its specific infecting power is due to the presence of living microorganisms, known in a general way as "disease germs;" and practical sanitation is now based upon the belief that the infecting agents in all kinds of infectious material are of this nature. Disinfection, therefore, consists essentially in the destruction of disease germs.

Popularly, the term disinfection is used in a much broader sense. Any chemical agent which destroys or masks bad odors, or which arrests putrefactive decomposition, is spoken of as a disinfectant. And in the absence of any infectious disease it is common to speak of disinfecting a foul cesspool, or bad-smelling stable, or privy-vault.

This popular use of the term has led to much misapprehension, and the agents which have been found to destroy bad odors—*deodorizers*—or to arrest putrefactive decomposition—*antiseptics*—have been confidently recommended and extensively used for the destruction of disease germs in the excreta of patients with cholera, typhoid fever, etc.

The injurious consequences which are likely to result from such misapprehension and misuse of the word disinfectant will be appreciated when it is known that:

Recent researches have demonstrated that many of the agents which have been found useful as deodorizers, or as antiseptics, are entirely without value for the destruction of disease germs.

This is true, for example, as regards the sulphate of iron or copperas, a salt which has been exten-

sively used with the idea that it is a valuable disinfectant. As a matter of fact, sulphate of iron in saturated solution does not destroy the vitality of disease germs, or the infecting power of material containing them. This salt is, nevertheless, a very valuable antiseptic, and its low price makes it one of the most available agents for the arrest of putrefactive decomposition in privy vaults, etc.

Antiseptic agents also exercise a restraining influence upon the development of disease germs, and their use during epidemics is to be recommended, when masses of organic material in the vicinity of human habitations cannot be completely destroyed, or removed, or disinfected.

While an antiseptic agent is not necessarily a disinfectant, all disinfectants are antiseptics; for putrefactive decomposition is due to the development of "germs" of the same class as that to which disease germs belong, and the agents which destroy the latter also destroy the bacteria of putrefaction, when brought in contact with them in sufficient quantity, or restrain their development when present in smaller amounts.

A large number of the proprietary "disinfectants," so called, which are in the market, are simply deodorizers or antiseptics, of greater or less value, and are entirely untrustworthy for disinfecting purposes.

Antiseptics are to be used at all times when it is impracticable to remove filth from the vicinity of human habitations, but they are a poor substitute for cleanliness.

During the prevalence of epidemic diseases, such as yellow fever, typhoid fever, and cholera, it is better to use, in privy-vaults, cesspools, etc., those antiseptics which are also disinfectants—*i.e.*, germicides; and when the contents of such receptacles are known to be infected this becomes imperative.

Still more important is the destruction at our seaport quarantine stations of infectious material which had its origin outside of the boundaries of the United States, and the destruction, within our boundaries, of infectious material given off from the persons of those attacked with any infectious disease, whether imported or of indigenous origin.

In the sick-room we have disease germs at an advantage, for we know where to find them as well as how to kill them.

Having this knowledge, not to apply it would be criminal negligence, for our efforts to restrict the extension of infectious diseases must depend largely upon the proper use of disinfectants in the sick-room.

GENERAL DIRECTIONS.

Disinfection of Excreta, etc.—The infectious character of the dejections of patients suffering from cholera and from typhoid fever is well established; and this is true of mild cases and of the earliest stages of these diseases as well as of severe and fatal cases. It is probable that epidemic dysentery, tuberculosis, and perhaps diphtheria, yellow fever, scarlet fever, and typhus fever may also be transmitted by means of the alvine discharges of the sick. It is therefore of the first importance that these should be disinfected. In cholera, diphtheria, yellow fever, and

¹ This report has been prepared by the Chairman of the Committee in compliance with the request of the Sanitary Council of the Mississippi Valley, as expressed in a resolution passed at its recent meeting in New Orleans (March 10th and 11th). A special meeting of the Committee on Disinfectants, was called to consider the report, at which the following members were present, viz.: Drs. Sternberg, Raymond, Smart, and Rohé. Dr. James E. Reeves, President of the American Public Health Association, was also present by invitation of the Committee. After careful consideration and revision the report was adopted.

scarlet fever, all vomited material should also be looked upon as infectious. And in tuberculosis, diphtheria, scarlet fever, and infectious pneumonia, the sputa of the sick should be disinfected or destroyed by fire. It seems advisable also to treat the urine of patients sick with an infectious disease with one of the disinfecting solutions below recommended.

Chloride of lime, or bleaching powder, is, perhaps, entitled to the first place for disinfecting excreta, on account of the rapidity of its action. The following standard solution is recommended:

STANDARD SOLUTION NO. 1.

Dissolve chloride of lime of the best quality¹ in soft water, in the proportion of four ounces to the gallon.

Use one pint of this solution for the disinfection of each discharge in cholera, typhoid fever, etc. Mix well and leave in vessel for at least ten minutes before throwing into privy-vault or water-closet. The same directions apply for the disinfection of vomited matters. Infected sputum should be discharged directly into a cup half full of the solution.

STANDARD SOLUTION NO. 2.

Dissolve corrosive sublimate and permanganate of potash in soft water, in the proportion of two drachms of each salt to the gallon.

This is to be used for the same purposes and in the same way as Standard Solution No. 1. It is equally effective, but it is necessary to leave it for a longer time in contact with the material to be disinfected—at least an hour. The only advantage which this solution has over the chloride of lime solution consists in the fact that it is odorless, while the odor of chlorine in the sick-room is considered by some persons objectionable. The cost is about the same.² It must be remembered that this solution is highly poisonous. It is proper, also, to call attention to the fact that *it will injure lead pipes if passed through them in considerable quantities.*

STANDARD SOLUTION NO. 3.

To one part of Labarraque's Solution (liquor soda chlorinata) add five parts of soft water.

This solution is more expensive³ than the solution of chloride of lime, and has no special advantages for the purposes mentioned. It may, however, be

used in the same manner as recommended for Standard Solution No. 1.

The following powder is also recommended for the disinfection of excreta in the sick-room and of privy-vaults, etc.:

DISINFECTING AND ANTISEPTIC POWDER.

One pound of chloride of lime; one ounce of corrosive sublimate; nine pounds of plaster of Paris. Pulverize the corrosive sublimate and mix thoroughly with the plaster of Paris. Then add the chloride of lime and mix well. Pack in paste-board boxes or in wooden casks. Keep dry.

As an antiseptic and deodorizer this powder is to be sprinkled upon the surface of excreta, etc.

To disinfect excreta in the sick-room, cover the entire surface with a thin layer of the powder—one-fourth inch in thickness—and if the material is not liquid pour on sufficient water to cover it.

Disinfection of the Person.—The surface of the body of a sick person, or of his attendants, when soiled with infectious discharges, should be at once cleansed with a suitable disinfecting agent. For this Standard Solution No. 3 may be used.

In diseases like smallpox and scarlet fever, in which the infectious agent is given off from the entire surface of the body, occasional ablutions with Labarraque's Solution, diluted with twenty parts of water, will be more suitable than the stronger solution above recommended.

In all infectious diseases the surface of the body of the dead should be thoroughly washed with one of the standard solutions above recommended, and then enveloped in a sheet saturated with the same.

Disinfection of Clothing.—Boiling for half an hour will destroy the vitality of all known disease germs, and there is no better way of disinfecting clothing or bedding which can be washed than to put it through the ordinary operations of the laundry. No delay should occur, however, between the time of removing soiled clothing from the person or bed of the sick and its immersion in boiling water, or in one of the following solutions; and no article should be permitted to leave the infected room until so treated.

STANDARD SOLUTION NO. 4.

Dissolve corrosive sublimate in water⁴ in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to each gallon to give color to the solution.

One fluidounce of this standard solution to the gallon of water will make a suitable solution for the disinfection of clothing. The articles to be disinfected must be thoroughly soaked with the disinfecting solution and left in it for at least two hours, after which they may be wrung out and sent to the wash.

Solutions of corrosive sublimate should not be placed in metal receptacles, for the salt is decomposed and the mercury precipitated by contact with copper, lead, or tin. A wooden tub or earthen crock is a suitable receptacle for such solutions.

Clothing may also be disinfected by immersion for

¹ Good chloride of lime should contain at least 25 per cent. of available chlorine. (See preliminary report of Committee on Disinfectants. THE MEDICAL NEWS, Philadelphia, February 7, 1885, page 147.) It may be purchased by the quantity at 5 cents per pound. The cost of the standard solution recommended is therefore less than two cents a gallon. A clear solution may be obtained by filtration or by decantation, but the insoluble sediment does no harm, and this is an unnecessary refinement.

² Corrosive sublimate costs about 70 cents a pound, and permanganate of potash 65 cents a pound, by the single pound. This makes the cost of the Standard Solution No. 2 a little more than two cents a gallon.

³ We assume that the solution used will contain at least 3 per cent. of available chlorine, which would give us 0.5 per cent. in the diluted solution. The cost per gallon of the undiluted solution should not be more than fifty cents by the quantity. This would make our standard solution cost between eight and nine cents a gallon.

⁴ Mercuric chloride (corrosive sublimate) is soluble in cold water in the proportion of one part in sixteen. Solution is greatly facilitated by heat.

two hours in a solution made by diluting Standard Solution No. 1 with nine parts of water—one gallon in ten. This solution is preferable for general use, especially during the prevalence of epidemics, on account of the possibility of accidents from the poisonous nature of Standard Solution No. 4. When diluted as directed this solution may, however, be used without danger from poisoning through the medium of clothing immersed in it, or by absorption through the hands in washing. A poisonous dose could scarcely be swallowed by mistake, owing to the metallic taste of the solution, and the considerable quantity which would be required to produce a fatal effect—at least half a pint.

Clothing and bedding which cannot be washed, may be disinfected by exposure to dry heat in a properly constructed disinfecting chamber for three or four hours. A temperature of 230° F. should be maintained during this time, and the clothing must be freely exposed—i. e., not folded or arranged in piles or bundles, for the penetrating power of dry heat is very slight.

The limitations with reference to the use of dry heat as a disinfectant are stated in a "Preliminary Report of the Committee on Disinfectants," published in THE MEDICAL NEWS, March 14, 1885.

The temperature above mentioned will not destroy the spores of bacilli—e. g., of the anthrax bacillus, but is effective for the destruction of all disease germs which do not form spores; and there is good reason to believe that this list includes smallpox, cholera, yellow fever, diphtheria, erysipelas, puerperal fever, and scarlet fever (?). Moist heat is far more effective, and it is demonstrated that ten minutes exposure to steam, at a temperature of 230° F. will destroy all known disease germs, including the most refractory spores.

In the absence of a suitable disinfecting chamber, it will be necessary to burn infected clothing and bedding, the value of which would be destroyed by immersion in boiling water, or in one of the disinfecting solutions recommended.

Disinfection of the Sick-room.—In the sick-room no disinfectant can take the place of free ventilation and cleanliness. It is an axiom in sanitary science that *it is impracticable to disinfect an occupied apartment*; for the reason that disease germs are not destroyed by the presence in the atmosphere of any known disinfectant in respirable quantity. Bad odors may be neutralized, but this does not constitute disinfection in the sense in which the term is here used. These bad odors are, for the most part, an indication of want of cleanliness, or of proper ventilation; and it is better to turn contaminated air out of the window, or up the chimney, than to attempt to purify it by the use of volatile chemical agents, such as carbolic acid, chlorine, etc., which are all more or less offensive to the sick, and are useless so far as disinfection—properly so-called—is concerned.

When an apartment which has been occupied by a person sick with an infectious disease is vacated, it should be disinfected. But it is hardly worth while to attempt to disinfect the atmosphere of such an apartment, for this will escape through an open win-

dow and be replaced by fresh air from without while preparations are being made to disinfect it. Moreover, experience shows that the infecting power of such an atmosphere is quickly lost by dilution, or by the destruction of floating disease germs through contact with oxygen, and that even smallpox and scarlet fever are not transmitted to any great distance through the atmosphere; while cholera, typhoid fever, and yellow fever are rarely, if ever, contracted by contact with the sick, or by respiring the atmosphere of the apartments occupied by them.

The object of disinfection in the sick-room is, mainly, the destruction of infectious material attached to surfaces, or deposited as dust upon window-ledges, in crevices, etc. If the room has been properly cleansed and ventilated while still occupied by the sick person, and especially if it was stripped of carpets and unnecessary furniture at the outset of his attack, the difficulties of disinfection will be greatly reduced.

All surfaces should be thoroughly washed with a solution of corrosive sublimate of the strength of one part in 1000 parts of water, which may be conveniently made by adding four ounces of Standard Solution No. 4 to the gallon, or one pint to four gallons of water. The walls and ceiling, if plastered, should be whitewashed with a lime wash containing the same proportion of corrosive sublimate, or they may be brushed over with the aqueous solution. Especial care must be taken to wash away all dust from window-ledges and other places where it may have settled, and to cleanse thoroughly crevices and out-of-the-way places. After this application of the disinfecting solution, and an interval of twenty-four hours or longer for free ventilation, the floors and wood-work should be well scrubbed with soap and hot water, and this should be followed by a second more prolonged exposure to fresh air, admitted through open doors and windows.

Many sanitary authorities consider it necessary to insist upon fumigation with sulphurous acid gas—produced by combustion of sulphur—for the disinfection of the sick-room. As an additional precaution, this is to be recommended, especially for rooms which have been occupied by patients with smallpox, scarlet fever, diphtheria, typhus fever, and yellow fever. It should precede the washing of surfaces and free ventilation above recommended. But fumigation with sulphurous acid gas alone, as commonly practised, cannot be relied upon for the disinfection of the sick-room and its contents, including bedding, furniture, infected clothing, etc., as is popularly believed. And a misplaced confidence in this mode of disinfection is likely to lead to a neglect of the more important measures which have been recommended. In the absence of moisture the disinfecting power of sulphurous acid gas is very limited, and under no circumstances can it be relied upon for the destruction of spores.¹ But exposure to this agent in sufficient quantity, and for a considerable time, especially in the presence of moisture, is destructive of disease germs, in the absence of spores. It is essential,

¹ See Preliminary Report of Committee on Disinfectants in THE MEDICAL NEWS of March 28, 1885.

however, that the germs to be destroyed shall be very freely exposed to the disinfecting agent, which has but slight penetrating power.

To secure any results of value, it will be necessary to close the apartment to be disinfected as completely as possible by stopping all apertures through which the gas might escape, and to burn not less than three pounds of sulphur for each thousand cubic feet of air-space in the room.¹ To secure complete combustion of the sulphur it should be placed, in powder or in small fragments, in a shallow iron pan, which should be set upon a couple of bricks in a tub partly filled with water, to guard against fire. The sulphur should be thoroughly moistened with alcohol before igniting it.

Disinfection of Privy-vaults, Cesspools, etc.—When the excreta—not previously disinfected—of patients with cholera or typhoid fever, have been thrown into a privy-vault this is infected, and disinfection should be resorted to as soon as the fact is discovered, or whenever there is reasonable suspicion that such is the case. It will be advisable to take the same precautions with reference to privy-vaults into which the excreta of yellow fever patients have been thrown, although we do not definitely know that this is infectious material. Disinfection may be accomplished either with corrosive sublimate, or with chloride of lime. The amount used must be proportioned to the amount of material to be disinfected.

Use one pound of corrosive sublimate for every five hundred pounds—estimated—of fecal matter contained in the vault, or one pound of chloride of lime to every thirty pounds.

Standard Solution No. 4, diluted with three parts of water, may be used. It should be applied—the diluted solution—in the proportion of one gallon to every four gallons—estimated—of the contents of the vault.

If chloride of lime is to be used, one gallon of Standard Solution No. 1 will be required for every gallon—estimated—of the material to be disinfected.

All exposed portions of the vault, and the wood-work above it should be thoroughly washed down with the disinfecting solution.

To keep a privy-vault disinfected during the progress of an epidemic, sprinkle chloride of lime freely over the surface of its contents daily. Or, if the odor of chlorine is objectionable, apply daily four or five gallons of Standard Solution No. 2, which should be made up by the barrel, and kept in a convenient location, for this purpose.

Disinfection of Ingesta.—It is well established that cholera and typhoid fever are very frequently, and perhaps usually, transmitted through the medium of infected water or articles of food, and especially milk. Fortunately we have a simple means at hand for disinfecting such infected fluids. This consists in the application of heat. *The boiling temperature maintained for half an hour kills all known disease germs.* So far as the germs of cholera, yellow fever, and diphtheria are concerned, there is good reason to believe that a temperature considerably below the

boiling point of water will destroy them. But, in order to keep on the safe side, it is best not to trust anything short of the boiling point (212° F.) when the object in view is to disinfect food or drink which is open to the suspicion of containing the germs of any infectious disease.

During the prevalence of an epidemic of cholera it is well to boil all water for drinking purposes. After boiling, the water may be filtered, if necessary to remove sediment, and then cooled with pure ice, if desired.

A sheet of filtering paper, such as druggists use, and a glass or tin funnel, furnish the best means for filtering water on a small scale for drinking purposes. A fresh sheet of paper is to be used each day.

SOME CLINICAL OBSERVATIONS ON THE THERAPEUTIC USES OF BROMIDE OF NICKEL.

BY R. LEAMAN, M.D.,

CHIEF OF MEDICAL CLINIC AT JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA.

As with all else that is new, a certain scepticism has ever prevailed concerning the utility of new drugs. Such conservation is doubtless beneficial, for how can any good come of changing an old drug of known utility for a new one of doubtful worth? Nevertheless, many remedies of great utility receive frequent condemnation at the hands of the profession simply because the proper conditions indicating their use are not known or appreciated.

Some time ago Professor Da Costa introduced the bromide of nickel as a useful remedy in the treatment of epilepsy and kindred diseases, and during the past year or more it has been repeatedly tried in the out-patient department of the Jefferson College Hospital.

During this time it has been found that this salt of nickel is especially useful in a certain class of cases, at the same time its method of administration has been greatly improved by the pharmacist. When first used it was noticed that in some cases great benefit followed its administration, whilst in other cases little relief was experienced from its employ, certainly less than from the combined use of the bromide of sodium and the bromide of potassium. Soon, however, it was remarked that the best results were obtained when the attacks took place regularly and at comparatively long intervals. But, on the other hand, where the attacks are frequent, amounting to several in the twenty-four hours, then better results were obtained from the use of the other bromides. In other words, where the object in view is to keep up a mild impression for a long while, that then the results obtained from the bromide of nickel are most gratifying.

Just here the question will naturally arise, Would not the mild impression of small doses of the other bromides be equally satisfactory?

Now, we must frankly confess that, despite its favorable recommendation by so distinguished an authority as Professor Da Costa, we at first obtained such varying results from its use that our minds were

¹ One litre of sulphur dioxide weighs 2.9 grammes. To obtain ten litres of gas it is necessary to burn completely fifteen grammes of "flowers of sulphur" (Vallin).

rather prejudiced against the drug than otherwise. However, difficult as it is to relieve one's mind of a preconceived idea, yet, after frequently employing this remedy in the special class of cases just mentioned, and comparing in the same patient the results which we obtained from this and the other bromides, we have no longer any doubt that this drug is a most valuable addition to the therapeutics of epilepsy.

In the first place, it disorders the digestive tract less than any of the other bromides. Especially is this true when administered in the effervescent form. The bromide of nickel, NiBr_2 , is formed by combining with the aid of heat eighty parts of bromine with fifty-eight and eight-tenths of pure nickel. As thus formed, it is a dry, slightly granular powder, of a greenish-yellow color, very soluble in water, producing a grass-green solution. The powder is insoluble in both alcohol and ether. The granular preparation of which we speak is made in the same way as the officinal granular citrate of magnesia, namely, by mixing the salt intimately with the bicarbonate of soda and tartaric acid, moistening with alcohol, and passing this moist powder through a sieve and then drying in a warm closet.

The carbonic acid liberated when the powder is put in water, makes it not only more pleasant to the taste, but more acceptable to the stomach, than when administered in any other form. The dose for one adult is from five to ten grains,—each teaspoonful containing five grains of the salt. When first introduced five grains were thought to be a full dose. But, as it was then given in solution, it is probable that the effervescent form does not quite represent the full strength, since although better borne by the stomach, larger doses are required than of the simple solution. In suitable cases we estimate that ten grains of nickel are fully equal in efficiency to half a drachm of the bromide of potassium. Although equal in therapeutic results to this amount of the potash salt, yet at the same time it is much less of a depressant to the nervous system. It is, therefore, especially indicated when a hysterical or hypochondriacal element is prominent in a case. Two marked cases of this kind have recently presented themselves which we deem worthy of special mention.

One was that of a young farmer, twenty-eight years of age, a man of fine physique, but of sluggish intellect; a man who had almost totally abandoned himself to a life of self-introspection, which was of course aggravated by the solitude of his rural surroundings. Moreover, he had fallen a victim to that current of popular literature which addresses powerfully the mind of a susceptible man, and centres his whole attention upon his sexual apparatus—we refer to the "Marriage Guides," so-called. He had read all the works of that character upon which he could lay his hands. He was thoroughly convinced that all of his ailments, which were legion, originated in the early practice of masturbation. To add to his despondency, about six months before presenting himself to us he was seized with an epileptic fit, which lasted for about fifteen minutes. During this time he frothed at the mouth. This was followed by a deep sleep, lasting for nearly an hour, after which he felt exhausted and dull for the remainder of the day.

Since that time he had been having a similar attack about once in three weeks, and these were gradually increasing in frequency. So that from all we could learn his was a case of idiopathic epilepsy. He was put upon five grain doses of the bromide of nickel, but at the end of three weeks had another attack, although much less severe. The dose was then increased to ten grains, and at the end of eleven weeks there had been no sign of another attack. He was much more cheerful and self-satisfied. Unfortunately he insisted that he was entirely cured, and we have not heard of him since. Moreover, we must state that a change of his hygienic conditions had somewhat to do with this result; for, like many epileptics, he was an enormous eater, and allowed himself to pass four or five days without having a movement from the bowels. All of this was, of course, regulated; and, since the mental condition of an individual is much influenced by the condition of his colon, we must, of course, attribute some of this improvement to his altered hygienic conditions.

The other case was that of a lady, thirty years of age, who had been subject to epileptic attacks for twenty-three years subsequent to a spell of scarlet fever. She usually had as many as two or three attacks daily, and this condition was aggravated about the time of the menstrual flow. The longest period during which she had been free from an attack was two weeks. During the seizures she loses consciousness entirely, foams at the mouth, and bites her tongue. This condition is usually ushered in by giddiness, occasionally by the sensation of a puff of air rising from the epigastrium; she has a very poor memory; is highly emotional, begging for relief in the manner almost of an imbecile; tongue is much coated; the urine normal. Having been thus afflicted for many years, and having travelled to a considerable extent, she had tried the numerous remedies of many doctors, both of the quack persuasion and of the regular profession. She was entirely familiar with the action of the bromides, severally and combined. She complained that, although they lessened the number and severity of the attacks, yet their depressant action upon the stomach and nervous system was so disagreeable that she almost preferred the disease to the remedy. Already disgusted with all drugs, when we informed her of our intention to give her a new bromide, it was with the utmost hesitancy that she consented to take the bromide of nickel. However, after some persuasion she consented, and was immediately put upon ten grain doses three times daily.

This was on the twentieth of October, 1884. On the thirtieth day of November following, after having steadily persevered in the use of the remedy, she returned despondent, stating that on the day previous she had a severe attack, the first for nearly six weeks. She would not consent to take the remedy any longer, since it had not entirely cured her. Fortunately for our observations, she continued it long enough to prove that the bromide of nickel was more effective than anything she had previously taken; and that, although her stomach was quickly upset by other bromides, she was able to take this without any inconvenience. This case, of course, proves an excep-

tion to the rule that the best effects are derived from this drug when the attacks are comparatively far apart.

We state these two cases as the types of two general classes of epilepsy in which the bromide of nickel is most beneficial. In these two classes it has been used with marked success in upwards of fifty cases. That the bromide of nickel will relieve headache, especially of the congestive form, was claimed for the drug at its first introduction.

It is a most excellent remedy for wakefulness dependent upon long-continued excitement of the nervous system from any cause. We claim for this drug no specific curative action; we only wish to state our belief that it is a most valuable addition to the therapeutics of epilepsy, especially in that class of cases which we have above set forth, and also a potent remedy in many kindred disorders.

REMOVAL OF LARGE FIBROID TUMORS PER VAGINAM—TWO CASES—RECOVERY OF BOTH.

BY R. S. SUTTON, M.D.,
OF PITTSBURG, PA.

WHEN a fibro-myoma occupies the cavity of the uterus, or when it is developed beneath its lining membrane, the question of removal, with its dangers and difficulties, is frequently divided between supravaginal hysterectomy and enucleation. But when the tumor is large, occupying not only the distended uterine cavity, but the vagina also, or when the tumor is developed in the body and neck of the uterus and supravaginal hysterectomy cannot be done, enucleation per vaginam is the proper operation.

The cases herein narrated were of the latter class. In both the tumors were large. The patients were greatly exhausted; the operations were difficult. Both recovered.

CASE I.—Mrs. L. McF. was sent to me by Dr. James Hasler, of Cochran, Pa. She was admitted to Terrace Bank Hospital for Women on March 9, 1884. A fibro-myoma occupied, completely filling, the pelvis. The external uterine os could not be reached; it lay behind a point above the symphysis pubis, and above the equator of the growth. The latter was developed in the posterior lip and body of the uterus, and was larger than the head of an ordinary sized child at term. On March 11th she was etherized by the head nurse (Miss Garvin), and placed in the lithotomy position on the table before a window. A second nurse supported one leg; my assistant, Dr. Stone, the other. A Simon's speculum, with a very short, broad blade, was placed in the vagina, and with it the nurse held the perineum down. A second Simon's speculum, with a long, narrow blade, was carefully crowded up between the tumor and the bladder, and held by Dr. Stone. The vagina and presenting enlargement were again carefully washed with five per cent. carbolic water. The parts were perfectly exposed, the rectum was guarded with the posterior, and the bladder and urethra with the anterior speculum.

With Paquelin's cautery I laid open all the tissue covering the tumor exposed to view. The capsule proved to be very thick, but the division of it with the cautery was bloodless. The edge of the capsule was now seized with a pair of long-handled forceps and lifted and steadied until Thomas's spoon saw was pushed well up between the capsule and the tumor. The latter was now seized with a pair of powerful volsellum forceps, with which I dragged the tumor about in aid of the movements with the spoon saw. In a few minutes the tumor was apparently separated from uterine tissue and blood was flowing freely from the vagina.

I now discovered that the incision made with the cautery did not lay open the lip of the uterus all the way to the external os, which I had not yet seen. With a pair of blunt scissors I now succeeded in carrying the incision entirely through the lip to the external os, a distance of only about a half inch. The tumor was now loose in the capsule, and the incision through which it must be extracted was about five inches in length. Whether the cavity of the peritoneum had been opened or not was uncertain, but I had held the saw in the process of enucleation close to the tumor as I worked it along the tumor.

The tumor was now seized with additional pairs of strong volsellum forceps and forcibly pulled out of the vagina, lacerating still more the perineum already lacerated in one of her accouchements.

The delivery of the tumor was followed by a free hemorrhage from the interior of the capsule. The specula were replaced, and the vaginal nozzle of a Davidson's syringe was inserted into the cavity of the capsule, and very hot water was injected until a half gallon was used. The bleeding was diminished, but the flow was still free. The lips of the wound were now held apart with long-handled forceps, and the empty capsule and uterus were pressed down to the ostium vagina, the perineal short-bladed speculum remaining *in situ*. The bleeding points were seized as rapidly as possible with Pean's and Koeberlé's compression forceps. Each pair locked and dropped. Thirty-two pairs were put on their shafts, completely filling the vagina. They were left *in situ*, and the anæsthetic withdrawn. At the end of twenty minutes the forceps were lifted. A little oozing continued. The hot water was again used for four or five minutes, and the interior of the capsule was then dried off and swabbed over with a solution of perchloride of iron in glycerine. The capsule and uterus were then pushed up, the speculum removed, and the patient was put to bed.

The after-treatment consisted of hot vaginal douches (sublimat 1 : 2000) every eight hours, milk punch, beef soup, quinine, and digitalis. She recovered and left the institution four weeks from the date of her arrival. She remains in good health at the present time. At this operation were present: Drs. Huselton, of Allegheny, and Lindley, of Perrysville, both skillful surgeons.

CASE II.—On June 23, 1884, I met Dr. Johnston, of Fairview, West Virginia, at the house of Miss S., his patient, with a view of removing per vaginam a fibro-myoma. The patient was a large-boned, stout, unmarried woman, of about thirty-five years of age.

She was pale and thin, her pulse small and rapid. She had been in labor for a month. On examination I found the tumor resting with its lower end on the perineum; the upper end was in the uterus, reaching to a point near the umbilicus. The lower end seemed to fill the vagina; the capsule was sloughing; the perineum was discolored, dark blue in appearance. There had been but little hemorrhage in the whole history of the case, but a discharge of thin serum had been constant.

She was etherized, placed in the lithotomy position, doused with hot water, and a thorough exploration made. The outlet of the vagina was very small. After careful exploration I concluded that the tumor was egg-shaped, the lower end being about the size of a fetal head; the upper end being nearer the size of an adult head. I had put my hand through the ostium vagina, and thrust my fingers up behind the tumor, but could not distinguish the margin of the dilated cervix. In the attempt I lacerated the perineum, which tore like rotten cloth. Two physicians, friends of Dr. Johnston, whose names I cannot recall, were present; also a young clergyman of the neighborhood. The clergyman gave the anæsthetic; a leg was taken charge of by each of the physicians referred to, and I reserved Dr. Johnston to assist me, which he very ably did.

The mouth of the vagina was well opened up with Simon's speculum and lateral retractors, and with volsellum forceps I seized the tumor, and with heavy scissors began to cut it to pieces, and to remove each piece as cut away. With the scissors and knife I succeeded in an hour in cutting to pieces and removing the entire growth.

While dragging out the last piece, adherent high up in the uterus by the pedicle to the uterine wall I inverted the uterus—it turned inside out. I cast a strong ligature around the pedicle of the tumor, cut it close to the knot, severed the pedicle with the scissors, and the operation was finished. I now replaced the uterus, and carried into its cavity a large rag, well saturated with vinegar, and, seizing the uterus through the abdominal wall with the free hand, I felt it contract on the other hand. The patient was then put to bed.

She recovered under Dr. Johnston's care, and a few months ago I closed the lacerated perineum. She is now in good health; she expresses it, "raised from the dead." While her view of the matter is an exaggerated one, there is no doubt that without operation she must very soon have died.

I am sorry I cannot recall the names of the medical friends of Dr. Johnston, who also contributed valuable assistance.

GALVANISM IN DIPHTHERITIC PARALYSIS.

By JAMES K. THACHER, M.D.,

PROFESSOR OF PHYSIOLOGY IN YALE COLLEGE, ATTENDING PHYSICIAN AT THE NEW HAVEN HOSPITAL.

THE strong tendency of diphtheritic paralysis to recover makes it difficult to distinguish and estimate the effect of modes of treatment. In the case presented below the danger of the fallacy *post ergo*

propter is considerably diminished by the making of the conclusions depend on a comparison between the arms.

A. S., æt. 17, in good health till September last, when he had an attack of diphtheria, and for three weeks was attended daily by a regular physician. The diphtheritic process in the throat was followed by inability to talk plainly, diplopia, and weakness and numbness in the extremities. The palatal and ocular paralysis reached a maximum before that of the limbs, and weakness was noticed in the arms earlier than in the legs.

When the patient came into my hands December 18, the paralysis had become almost entirely confined to his limbs. Both his arms and legs were quite weak, and showed partial reaction of degeneration.

There can be no doubt of the diphtheritic nature of the case, nor does there seem reason to question that the paralysis was due to a multiple peripheral neuritis.

The legs were now treated with galvanism and massage, and the usual tonics ordered. The arms were reserved for experiment. The numbers given below indicate the strength of the hands as measured by an ordinary Tiemann's grip dynamometer.

December 18.—Right 31, left 29. Left arm galvanized, strong current, kathode labile, ten minutes daily for ten days. Right arm not treated.

28th.—Right 43, left 46. Right arm galvanized as above for seven days. Left not treated.

January 4.—Right 58, left 56. Left massaged for seven days. No galvanism. No treatment of right.

11th.—Right 69.4, left 64.3. Left galvanized, not massaged for seven days. Right not treated.

14th.—Right 70.3, left 71.7. Right faradized for seven days.

25th.—Right 74.6, left 75.8. The patient then, considering himself well, withdrew from observation.

It will thus be observed that in each of the three periods in which galvanism was used, applied to the weaker arm it reversed the order of strength; and this reversal did not take place with either faradism or massage in the single trials of these modes of treatment.

The gains under galvanism are exhibited as follows:

	Galvanized arm.	Untreated arm.
(1) Ten days to left arm .	17	12
(2) Seven days to right arm .	15	10
(3) Seven days to left arm .	7.4	0.9
Total . . .	39.4	22.9

That is, the galvanized arm made almost double the progress of the other (1 : 1.72).

The gains with faradism and massage were:

	Arm treated.	Arm untreated.
Massage	8.3	11.4
Faradism	4.3	4.1

So that here there appears to be essentially no difference produced by the faradism, while the massage seems to have been the reverse of successful. The conclusion that the massage was injurious can, however, hardly be drawn from a single seven days' trial.

RAPID DILATATION OF THE CERVIX UTERI
FOR STERILITY AND DYSMENORRHOEA.BY A. H. GOELET, M.D.,
OF NEW YORK.

DILATATION of the cervix, although mostly done for the relief of sterility and dysmenorrhœa, has proved most invaluable in the treatment of endometritis or uterine catarrh, as it is termed by some. In fact, we find this condition always associated with contracted cervical canal to a greater or less degree. That is, where there is an abnormally small cervical canal, the normal secretions from the uterine cavity cannot gain free exit, and sooner or later endometritis is the result.

The majority of cases of this disease occurring in women who have not borne children, are produced in this way. After marriage, when the genital organs are called upon to perform all their functions, there is a greater degree of congestion consequent thereon, the secretions are increased, and the disease becomes more apparent and the dysmenorrhœa more intense. In dilating for stenosis there always escapes, after dilation is complete, a plug of thick mucus resembling albumen which would not have been suspected before; and especially is this so where no endometritis is apparent before dilatation. Cases of endometritis which have resisted treatment before, yield readily after free vent is given to the discharge by dilatation and applications can be thoroughly made. Complete dilatation, if maintained, will alone cure slight cases.

Rapid dilatation is a perfectly safe procedure, free from danger if the patient be confined to bed for a few days after, and is effectual and permanent if done in the way described below, and an intra-uterine glass stem be used afterwards to prevent re-contraction. Although it may be done in many cases without an anæsthetic, the result will be more satisfactory with it. Whether this be due to more thorough relaxation produced by the anæsthetic, or the operator dilates more thoroughly when there is no apprehension of giving pain, I cannot say, but probably the latter. In dilating for stenosis an anæsthetic should always be used.

Much may be accomplished by preparatory treatment if there be much rigidity of the parts or irritation. I use for a few days before, vaginal tampons of absorbent cotton, soaked with glycerine, to which boric acid has been added to saturation. A string being attached to the tampon, it can be removed by the patient in twenty-four hours, and the vagina thoroughly irrigated with hot water.

I use the Palmer dilator and find one size all that is necessary.

The patient is anæsthetized and placed on a table in a good light. A Nott's trivalve or a bivalve speculum is generally used with the patient on her back, or the Sims's speculum may be used with the patient on her side. The cervix is steadied with a tenaculum, and by a slow steady pressure the dilator may be passed through both external and internal os when the direction of the canal has been previously determined by passing the sound. A shoulder on

the blades of the dilator prevents its being introduced too far. I have never yet found it necessary to bore the external os with a pair of pointed scissors as recommended by some. When the dilator has been introduced as far as the shoulder, the handles are brought together gradually by the thumb and middle finger, while with the forefinger, the nut which works on the screw is made to follow up the advantage gained, and hold it there when the fingers become tired. Usually the dilation is carried to the full extent of the instrument, and is not found to be too much. Tearing of the os has never occurred with this instrument in my hands, which is attributed to the way the blades separate—like a pair of scissors and not parallel. After dilation is complete the screw is loosened and the instrument withdrawn. The thick plug of mucus, already spoken of, is now removed and the cervical canal cleansed by means of a piece of absorbent cotton twisted around an applicator.

If flexion exists, the dilator is again introduced and turned upon its axis, reversing the flexion and the handles are brought together.

The intrauterine stem which is now introduced is a glass rod, two inches long, size of a No. 20 steel sound (French); rounded at one end, very slightly curved, narrowing into a neck near the other or lower end, and terminating in a button-shaped shoulder which limits penetration. This will be found very hard to handle, and is best introduced with a pair of long uterine dressing forceps, the blades of which have been wrapped with cotton, so that the glass button can be grasped firmly without slipping. A tampon of cotton saturated with glycerine and boric acid is placed against the cervix to hold the stem in position and relieve the irritation. During the first twenty-four or forty-eight hours it will be found that the stem is grasped firmly by the cervix, but after this there is some relaxation and it is apt to slip out. This shows that contraction does take place after dilatation, and that the stem should be used to prevent it. In cases in which there is flexion the stem serves to hold the uterus straight or nearly so.

The patient is placed in bed and allowed to recover slowly from the anæsthetic. She very seldom complains of any pain or inconvenience after the operation, and if there is a little soreness it will pass off in a few hours. It will be even difficult sometimes to convince her of the necessity of remaining in bed. Usually the stem is removed every day, cleansed and replaced, but if there be very little discharge from the uterine cavity it may remain in position for two days at a time. After a week it is removed permanently and the patient allowed to get up. And if the weather is favorable, she may go out the following day.

The following cases are given to illustrate the success of the operation:

CASE I.—Mrs. C., æt. 22 years. Married two years. Before marriage she suffered very little inconvenience; but after, dysmenorrhœa became troublesome and there was considerable discharge. Operated July 8, 1884, under chloroform. Slight endometritis found. Subsequent menstruations entirely

free from pain. In October she had a miscarriage at two months. No dysmenorrhœa afterwards.

CASE II.—Miss E., æt. 19 years, has suffered with dysmenorrhœa since puberty, and now it has become so intense it is unbearable. Upon examination a very small cervix was found with a pin-hole os which permitted the introduction of the smallest size uterine probe with difficulty and considerable pain. Operated upon her under ether, October 23, 1884. There was no pain with menstruation after, and three months after the sound was passed with ease and without pain.

CASE III.—Mrs. B., æt. 26 years. Married three years. Sterility and dysmenorrhœa since first menstruation, more intense since marriage, which forced her to apply for relief. Operated September 8, 1884, without anæsthetic. With the first menstruation following operation there was a slight pain due to a cold she had contracted. After this time she ceased to have pain. In this case the patient volunteered the information that there was no sensation during intercourse before the operation, but after it was all that could be desired.

CASE IV.—Mrs. R., æt. 25 years. Married fifteen years. Has suffered with dysmenorrhœa since her first period and she has never conceived. She had a severe menorrhagia once, and was treated without examination, and has had pelvic peritonitis. A very irritating discharge which she has had for several years has caused great annoyance. Examination showed endometritis with considerable stenosis. Operated August 26, 1884, without anæsthetic. During the operation she became nauseated, and vomited from irritation of cervix. Menstruation appeared three days after and was free from pain. The stem was removed for a few days. Eight days after the operation when the stem was again introduced, it was found necessary to dilate again, as contraction had taken place.

CASE V.—Mrs. E., æt. 26 years. Married four years. Sent to me by Dr. L. Has suffered with dysmenorrhœa since puberty, worse since marriage, requiring morphia hypodermically. She has remained sterile, and for the past two years has had endometritis, which has been treated. Sponge-tents have been used at different times by other specialists, and rapid dilatation has been performed without success. Operated upon under ether, April 12, 1884. The first menstruation following operation was accompanied with only slight pain at first. After that all dysmenorrhœa ceased and after appropriate treatment the endometritis ceased. Dr. L. wrote me in November that she was pregnant.

CASE VI.—Mrs. J., æt. 22 years. Married three years. Sterility and dysmenorrhœa. Operated June 22, 1883. Permanent relief of the dysmenorrhœa. She became pregnant in December of same year.

CASE VII.—Miss L., æt. 20 years. Intense dysmenorrhœa since puberty. Operated February 27, 1883. No return of pain.

CASE VIII.—Miss R., æt. 18 years. Intense dysmenorrhœa since puberty, worse at times. Operated March 4, 1884; ether. No return of pain.

CASE IX.—Mrs. F., æt. 27 years. Married seven years. Sterility and dysmenorrhœa, due to stenosis

and acute ante flexion. Operated upon March 20, 1884; ether. When last seen, November 25, there had been no painful menstruation since operation, and she was pregnant.

CASE X.—Mrs. A., æt. 24 years. Married five years. Has suffered from painful menstruation always, and has had no children. Stenosis with retroflexion. Operated upon May 17, 1884; ether. Complete relief of dysmenorrhœa followed the operation. She was pregnant and expects to be confined some time this summer.

The above ten cases have been taken at random from my case-book, and will serve to illustrate what we wish to show just as well as if the whole number were given, and much valuable time and space will be saved by limiting the number.

Out of forty cases operated upon, the dysmenorrhœa has always been relieved, except where dependent upon ovarian disease. And in such cases no positive result is expected, and no such promise is made the patient. The operation has been performed in cases in which ovarian enlargement existed to a slight degree without lighting up any trouble, but the practice is not advocated. No unfavorable symptoms have followed any of the operations, except in one case in which a sharp cystitis occurred on the fourth day after, which may have been produced by pressure of the vaginal tampon on the base of the bladder, but the patient had suffered with attacks of it before. It was easily controlled.

Sterility, if dependent wholly upon the stenosis, is overcome by the operation; but if endometritis exist, conception cannot take place until this is cured. But this is easily accomplished after dilatation, unless it be secondary to ovarian disease, which is often the case. Then a cure need not be expected unless the ovarian disease be curable.

243 WEST FIFTY-FOURTH STREET.

MEDICAL PROGRESS.

CALCAREOUS DEGENERATION OF THE HEART.—At a meeting of the Société Médicale des Hôpitaux, held March 13, 1885, M. A. ROBIN reported a case of calcareous degeneration of the heart.

A man, aged 85, vigorous, and having always had excellent health, entered the infirmary complaining of diarrhœa. The heart on examination presented nothing abnormal, the arteries were atheromatous.

He went out cured, but a few days subsequently he was brought back suffering from a right hemiplegia without loss of consciousness. The heart was found to be hypertrophied; its beats dull and irregular. Death soon occurred. Autopsy showed the heart to be overlaid with fat, though the man was emaciated. The valves were normal. Upon the interventricular wall from the top to the bottom of the left ventricle a calcareous plate extended, an eighth of an inch in thickness. The coronary arteries were much retracted by the thickening of their walls, but the patient never had presented any of the symptoms of angina pectoris. Microscopic examination revealed hypertrophic sclerotic myocarditis, and a calcareous infiltration of the endocardium to the level of the interventricular wall.

Notwithstanding the indications which Haller and Renoudin consider peculiar to calcareous degeneration, and in spite of the assertion of Laennec, that in this pathological condition heart murmurs can be distinguished at a distance from the patient, recent observations reveal the latest character of this lesion, save, in the present instance, that the sounds of the heart were muffled and remote. There was no symptomatology whatever, which could be explained by the lesions discovered after death.

The case is interesting, as showing that extensive anatomical lesions, if they do not implicate the valves, may exist in the heart without interfering with their action or preventing contraction of the heart muscle.—*L' Union Médicale*, March 17, 1885.

OCCCLUSION OF THE TRACHEA BY A CASEOUS AND RELAXED BRONCHIAL GLAND.—PROF. PETERSEN-KIEL, in the *Deutsche med. Wochenschr.*, of March 5th, publishes an interesting case of plugging of the trachea by a caseous bronchial gland. As but few cases are recorded in which the entire lumen of the trachea has been closed by a suppurating gland and respiration rendered impossible, the history is of special interest.

The child, aged six years, had a history of hereditary tuberculosis, but externally showed no indication of scrophulosis, and had recovered from a severe attack of measles, and subsequently from an attack of German measles complicated with bronchitis. Since her last illness, however, her health was not so good, and she was subject to frequent attacks of asthma, which progressively became more severe. At last, she was brought to the hospital, and the dyspnoea was so severe that death was imminent, and tracheotomy was hurriedly decided upon, and performed. As a result of the operation, the breathing became but little easier, and it was evident, therefore, that the obstruction was below the incision.

In order to determine the exact condition, Prof. Petersen-Kiel then introduced an elastic bougie into the trachea, which met with no obstruction until it reached the bifurcation. Upon withdrawing the bougie, crumbling masses of caseous matter were found adherent to it, whereby it was rendered clear that the impediment was due to a caseous gland. By means of a Nélaton's catheter, the end of which was cut off, a collection of cheesy matter, more or less calcified, was removed.

The breathing now became freer. No canula was introduced into the trachea, but the edges of the wound kept open by silk stitches. The child soon fell asleep. During the night following the operation, more caseous matter was evacuated in efforts of coughing. The patient recovered without accident, and the wound made by operation healed in twenty-three days. No abnormal condition existed in the lungs, and the portions of the glands evacuated contained no tubercle bacilli.

FRACTURE OF THE URETHRA.—PROFESSOR V. DITTEL, in the *Wien. Med. Blätter*, 1885, No. 2, reports the occurrence of this rare accident during the preceding year. The patient, a man aged thirty years, came to the clinic, relating that he four days previously had struck his penis, during erection, against the symphysis pubis of his wife. Severe pain was at once felt throughout the entire organ and on attempting to uri-

nate, burning was experienced at a localized spot in the urethra.

The following day the entire penis was much swollen and urination very painful. The swelling persisted in spite of the application of Goulard's extract, and the man came to the hospital for treatment.

Examination showing normal capacity of the urethra. Retention of urine had persisted for thirty hours and the bladder was much distended. The penis was very much swollen. In the perineum corresponding to the bulbar portion of the urethra, on pressure a very sensitive spot was found. A Nélaton catheter, at this situation, entered a small opening and was only introduced into the bladder after manipulation. Notwithstanding an incision was made, the day following, urinary infiltration became more considerable, and on the fifth day a scrotal incision along the entire raphé was necessary and the bulbar portion of the urethra was found to be completely torn through. The ends were separated about one-fifth of an inch and were perfectly smooth. The edges of the wound were united by suture, but did not come into exact apposition. The urethral and scrotal wounds healed under iodoform dressings. Some time subsequently a secondary suture was introduced into the urethra. A small fistulous opening persisted however, which, while it diminished in size, failed to close entirely. In this condition the man was discharged.—*Centralbl. für die Gesamte Therapie*, March, 1885.

TREATMENT OF TRICHINOSIS.—DR. GOTTLIEB MERKEL reports a case of a man who had eaten some raw sausage. After eating it, he received a dispatch stating that as several persons in the house of the butcher from whom the sausage was bought were sick, it was probable the meat contained trichinæ. He had as yet felt no ill-effects from eating the meat, but came wishing to be certain whether it did or did not contain the parasites. Examination showed them to be present, and the patient at once entered a hospital. There had been no movement of the bowels since the ingestion of the sausage. Accordingly doses of the infus. sennæ comp., were administered in rapid succession to an aggregate of nearly ten ounces. This was followed first by solid, and then by thin and watery evacuations. In the latter several non-encapsulated trichinæ and fragments of the same were recognized. They seemed of more than ordinary size, though no peculiar characteristics were recognizable. The following day, along with a restricted diet, the patient was directed to take a tablespoonful of pure glycerine every hour. Fifteen tablespoonfuls were taken without any unpleasant symptoms, save a feeling of thirst and dryness in the mouth and fauces (which was relieved by draughts of seltzer water). There was no hæmoglobinuria, and only thin watery stools resulted. On the thirteenth day, the patient left the hospital. He reported subsequently that he remained perfectly well, while the other persons who had eaten of the same sausage had been seriously ill. The case is interesting as showing that prompt treatment of those eating infected meat may result happily, and that glycerine may be prescribed safely in large doses, and merits further trial as a remedy, notwithstanding the adverse opinion hitherto held as to its efficacy.—*Deutsches Archiv für klin. Medicin*, February, 1885.

THE EFFECT OF PAPAYOTIN IN DIPHTHERIA, CROUP, AND CROUPOUS MEMBRANE.—PROF. M. J. ROSSBACH, in the *Deutsches Archiv für klin. Medicin*, reiterates the views by him expressed four years ago concerning the action of papayotin in diphtheria, croup, and croupous membrane. He says: Papayotin is, indeed, as I said in my former publication, no specific against diphtheria and croup. It can not consequently cure all cases of diphtheria, especially those which have persisted for a long time, and in which the heart has grown weak, but it is the best means of dissolving the croupous and diphtheritic membranes which we at the present time possess, and its application opportunely made frequently renders tracheotomy superfluous, reduces the mortality incident to these diseases, and by removing the membrane, renders the danger of new infection less, and has a salutary effect upon the attending fever. Professor Rossbach insists that if these results are not obtained, an inferior preparation of papayotin has been used.

THERAPEUTIC USE OF TERPINE.—R. LEPINE, in the *Revue de Médecine*, of February, 1885, calls attention to the use of terpine as a therapeutic agent. Chemically it is the hydrate of turpentine. Like turpentine, it has direct action upon mucous membranes, the kidneys, and upon the nervous system.

Lepine holds the opinion that its use is preferable to that of the oil of turpentine, and considers it *par excellence* a true diuretic, having special action upon the renal epithelium.

Its action upon the bronchial mucous membrane varies according to the dose. The administration of the drug is very simple. Crystals of terpine are soluble in alcohol. In bronchitis it may be administered in alcoholic solution with the addition of a soluble syrup, and with white wine if a special diuretic effect is desired.

When larger doses are given in nervous subjects whose kidneys are normal, an astringent should be added to prevent diarrhoea. For this purpose the syrup of catechu is well adapted. Lepine has administered twenty-three grains daily for several days in succession without bad effect. If it causes vomiting, it should be given in enemata.

SUBCUTANEOUS BLOOD INJECTION.—PROFESSOR V. ZIEMSEN, in the *Deutsches Archiv für klin. Med.*, at the conclusion of an interesting paper on the subcutaneous injection of blood, says that "the number of corpuscles in the blood of persons receiving the injection is increased. I am thoroughly convinced the simple procedure is practicable to every physician, so soon as he finds a person willing to supply the blood, which, in times of necessity or danger, is never difficult. The injection, moreover, is not in the least dangerous in its effects to the patient. In a few instances only—in phthisical patients—was there any resultant pain. This lasted only one or two days, and was accompanied by no other unfavorable symptoms. Cases of severe anæmia and chlorosis,—of anæmia after post-partum hemorrhage, due to severe wounds, and epistaxis, and intestinal hemorrhage (I lately had the opportunity to practise subcutaneous blood injection after enormous hemorrhage in typhoid fever), in leukæmia and pseudo-leukæmia, progressive pernicious anæmia, and in poisoning by noxious gases, give in practice, inducement

to attempt the restoration of the blood without resorting to transfusion. Accordingly, it happens that transfusion is only tried at the last moment, consequently is seldom or never of any benefit.

Upon repeated blood injection, in many chronic blood diseases, I can lay especial emphasis. Transfusion is a procedure much more advised than practised, and has never gained any considerable significance among the resources of practical medicine. Possibly, owing to its simplicity and freedom from danger, the method of blood renewal by subcutaneous injection will attain a greater popularity.

THE ETIOLOGY AND PROPHYLAXIS OF RACHITIS.—DR. J. COMBY, in a paper based upon extended clinical observation, reaches the following conclusions as to the etiology and prophylaxis of rachitis:

Etiology.—1st. Vicious alimentation of the new-born is the extensive cause of rachitis.

2. By vicious alimentation is meant all aliment other than mother's milk given to the child before the age of one year.

3. Vicious alimentation includes also the milk of the mother when given at improper intervals—when too frequent, or when the milk is poor in quality.

4. The most certain means of producing rachitis is by feeding the child with pap, porridge, or other food, except milk.

5. Artificial nourishment from a bottle with a long tube is a very frequent cause of rachitis. The use of a bottle without a tube, or simply of a glass, or a cup, is less dangerous.

6. Merely nursing, in order to avoid the troubles of artificial feeding, not infrequently produces rachitis.

7. Premature weaning is an infrequent cause of rachitis.

Prophylaxis.—1. Natural nursing is the most certain means of preventing rachitis.

2. Suckling, to have this effect, should be well-regulated (six or seven times in twenty-four hours), exclusive and prolonged. Under these conditions, if the milk is of good quality, rachitis is seldom observed.

3. In case necessity compels mixed-nursing the bottle should be avoided, and the infant should receive the milk directly from a glass or cup, and at intervals of at least three hours.

4. If artificial nursing alone is possible, the milk should always be of good quality, pure, or almost pure, warm, but not boiled, and always given without the bottle.

5. The infant should receive six or seven times a day from three to four ounces of milk, according to its age or development.

6. Under no pretext should there be given to a child naturally suckled mixed or artificial diet, or any food except milk, before it has attained the age of one year.

7. Weaning should not be attempted previous to this age, and alimentation immediately succeeding should be carefully selected.

By following these rules, which are applicable to the great number of cases, the conditions under which rachitis, or at least its more serious manifestation may be avoided, are best secured.—*Archives Générales de Médecine*, March, 1885.

TREATMENT OF SCABIES.—GRIGORJEW, in the *Sborn Kavkask. med. Obcht.*, No. 38, recommends the following treatment of scabies:

Iodoform	3j.
Cerat simp.	3iss.
Ol. oliv.	q. s.
Ft. Ung.	

The treatment comprises two periods. In the first, the patient is plunged into a hot bath, and rubbed for half an hour with black soap. The above ointment is then applied. Two baths and two inunctions are necessary to destroy the parasite. The second period is devoted to the consecutive treatment of the disease, this is limited to the application of the ointment once or twice a day to the painful portions of the skin. This treatment is continued five or six days.

According to Grigorjew, the advantages of this method of treatment are the following:

1. The rapid destruction of the parasites and their eggs.
2. Diminished sensitiveness of the skin, and, therefore, the prevention of itching so troublesome in the disease.
3. Absence of irritation of the skin.
4. Speedy cure of the eczema consequent upon the disease.—*L'Abeille Médicale*, March 23, 1885.

ANTISEPTIC PROPERTIES OF CITRIC ACID.—The experiments of SCHALTZ, detailed in the *Journ. d'hyg. e Farmacista italiano*, show that citric acid possesses very powerful antiseptic qualities. Pieces of meat placed in a five per cent. solution of the acid, after five days were removed in a perfect state of preservation. Fresh meat put in a one per cent. solution was disorganized without emitting any fetid odor. Schaltz, pursuing his investigations still further, found that a solution of the acid of 1 to 1000 exercises prompt germicide effect upon vegetable organisms. The salts of citric acid, however, seem not to possess the same antiseptic properties. Thus, meat put in a five per cent. solution of citrate of soda, putrefied as rapidly as in pure water.—*Gazzetta Medica di Torino*, March 5, 1885.

BACTERIA TWO HUNDRED YEARS AGO.—The Amsterdam *Allgemeen Handelsblad* publishes a communication from Professor E. Cohn, of the University of Breslau, who recapitulates the substance of a correspondence of the celebrated naturalist Leeuwenhoek with Francis Aston, of London, a member of the Royal Society. Leeuwenhoek, writing from Delft, in 1683, reports that among the *débris* of food remaining between his teeth he had discovered, with the aid of the microscope, living organisms moving with great activity. He distinguishes various kinds among them, which he describes so precisely that they would be easily recognizable. One, which occurs least frequently, resembles a rod, the bacillus; others, twisting in curves, are bacteria; a third kind, creeping in snake fashion, is the vibrio *ugla*; another kind, of extreme minuteness, resembles a swarm of flies rolled up in a ball, and is evidently the micrococcus. Its movements cannot be traced with certainty. He says that this species seems to be made up of parallel threads, varying in length, and remaining immovable, while other specks move in and out through the

web. Leeuwenhoek marvels that these things could live in his mouth, notwithstanding his systematic habit of cleansing it. He instituted observations which showed that they were also to be found in the mouths of other persons. Some years later he could not discover any traces of those minute organisms, and he was led to attribute their disappearance to the use of hot coffee. But shortly afterwards he rediscovered them as lively as ever. In September, 1692, he sent some sketches of them to the Royal Society. Professor Cohn observes that it would seem from this correspondence that the knowledge concerning those minute entities made no advance for nearly two centuries, and he remarks on the wonderful skill with which Leeuwenhoek used the imperfect instruments of his time.—*London Medical Record*, March 16, 1885.

GASTROTOMY AND CESOPHAGOSTOMY FOR THE REMOVAL OF FOREIGN BODIES.—PROF. BILLROTH, in the *Allgemeine Wiener med. Zeitung*, of February 24, 1885, reports two cases in which cesophagostomy and gastrotomy were severally performed for the removal of a foreign body. In each case a set of artificial teeth was swallowed, and necessitated operation. The history of the case in which gastrotomy was performed is as follows.

The patient—a girl nineteen years of age—while asleep swallowed her artificial teeth. All efforts to extract them were fruitless and they finally passed into the stomach. Gastrotomy was performed and the whole hand was introduced into the stomach, but the foreign body was not discovered. Prof. Billroth accordingly enlarged the incision in the abdominal wall and searched the entire abdominal cavity for the teeth, but again failed to discover them. Search was now made in that portion of the stomach posterior to the gastro-splenic ligament, and adjoining the vertebral column.

This part of the stomach, owing to its position and attachments, cannot be withdrawn from the abdominal cavity from such an incision as had been made, and therefore had escaped examination.

Prof. Billroth now renewed the search with both hands and the foreign body was discovered and extracted.

The patient recovered with no bad symptoms.

BULLET-WOUND OF THE LIVER; EXTRACTION; RECOVERY.—DR. W. F. SMARTT reports a case of bullet-wound involving the right lobe of the liver, in which the ball was extracted and the patient recovered. The weapon from which the shot was received was a revolver, carrying a bullet weighing eighty grains. The shot was received at a distance of about three yards.

When first seen, at 6.25 A. M., the patient was in a state of extreme collapse, and his shirt was saturated with blood. A wound was found over the sixth rib of the right side, about one inch from the sternum. A probe passed for a distance of about one inch and a half, in a downward and outward direction, to the intercostal space between the sixth and seventh ribs. Pressure over the epigastrium gave rise to considerable pain, more especially at a point opposite the junction of the cartilages of the seventh and eighth ribs. It was, therefore, concluded that the bullet must have penetrated the abdomen.

Having administered fifty drops of laudanum in an ounce of brandy, Mr. Smartt operated, without an anæsthetic. The patient was placed on his left side, the skin was drawn well down over the edge of the ribs, and an exploratory incision, two and a half inches in length, was made through the skin and subcutaneous cellular tissue, over the edge of the cartilage of the eighth rib. When the finger was used as a probe through this opening, the circumscribed pain above mentioned was much more severely felt. Mr. Smartt cut down through the abdominal wall, and was then able to feel a slight elevation on the surface of the liver. On cutting to about the depth of half an inch into its substance, the knife struck the bullet, which was easily extracted with a small pair of artery-forceps. The wound was then well swabbed out with a 1 in 20 solution of carbolic acid, and its edges were brought together with fine carbolized silk ligatures. Dry iodoform, with a pad of marine lint, was used as a dressing; and a broad bandage was firmly placed round the abdomen.

A pill containing one and a half grains of opium, and half a grain of calomel, was ordered to be given every hour for three doses.

At 2 P. M. the patient was in a state of utter collapse. Enemata of brandy and beef essence, in arrow-root starch, were ordered to be given every hour.

A 4 P. M. he had rallied somewhat. He had not passed urine since 4 A. M., and eighteen ounces of high-colored, but otherwise healthy, urine were drawn off.

With the exception of slight pain and tympanites, no unfavorable symptoms were manifested. In two days the urine was passing without difficulty, and the temperature at no time rose above 100° F. Eighteen days from the reception of the injury the patient was discharged, able to attend to his usual work.—*British Medical Journal*, February 21, 1885.

GERMICIDE TREATMENT OF LUPUS BY MERCURIALS.

—DR. CH. ÉLOY reports a case of lupus in which the patient refusing treatment by the ordinary method, resort was made to mercurial treatment.

The lesions of the disease in the case under consideration were superficial and easy of access, and therefore epidermic applications only were made. A plaster analogous to that suggested by Unna was ordered, of which the following is the formula:

R.—Hydrarg. chlor. corros. . . . gr. 15
Potass. sulpho-ichthyolatis . . . 3iiss.—M.

The border of the plaster extended beyond the marginal zone of the ulceration about one-half inch, and it was directed to be renewed every twenty four hours until suppuration was well established—and at each renewal the diseased surface was washed with a solution of corrosive sublimate of 1 to 300. Within twenty-four hours there was evident an erythematous swelling about the borders of the diseased tissue the whole tumor had assumed a dark and escharotic appearance, and the patient complained of a very severe smarting sensation. A carbolized poultice was now applied, with the result that the eschar sloughed and left a bare suppurating surface.

The following days—morning and evening—the ulcerating surface was covered with compresses of gauze

soaked in corrosive solution of the strength of 1 to 1000, overlaid with wadding and held in position by bandages. The swelling which followed the application of the ointment soon disappeared and a slight desquamation of the epiderm succeeded. Moderate suppuration continued, gradually decreasing however, and in eighteen days the entire ulcer cicatrized. As an adjuvant to the local treatment, Fowler's solution was prescribed internally as recommended by Doutrelepon.

Under the mercurial treatment there were no symptoms of mercurial poisoning, no tendency even to salivation being noticed. Slight pain and congestion of the parts adjoining the diseased surface were the only ill-effects observed during the application of the ointment. Examination of the cicatrix showed it to be healthy, with no signs of a return of the disease. The general condition of the patient is much improved, and she still continues the use of arsenic tonics and cod-liver oil. At the end of nine months there has been no return of the disease, and the method of treatment deserves further attention.

The method of treatment by cauterization requires apparatus and skill on the part of the operator, while the method by scarification is still more inconvenient and chemical cauterization, according to Unna, is a last resort and not a method of treatment properly so-called. If therefore more extended trial confirm the result here attained and show the use of the remedy to be free from danger, the germicide treatment of lupus will put into the hands of the physician, not a specialist, a powerful and at the same time a convenient means of curing a disease hitherto most rebellious to treatment.—*L'Union Medicale*, March 24, 1885.

THE EFFECT OF ANTIPYRIN.—DR. GÖTZE, in the *Berliner klin. Wochenschr.*, of March 9, 1885, says, apropos of his experience with antipyrin, that generally it may be used in febrile diseases, such as typhus, pneumonia, exudative pleuritis, phthisis, diphtheria, and facial erysipelas with good results. In a few instances only does it produce, along with the lowering of the temperature, such excessive sweating as to render its use inconvenient. Vomiting also is sometimes caused by its administration, when other remedies, such as naphthalin and chinolin, have been well borne. In some instances it is entirely inoperative, the temperature having even been observed to rise during its administration. On the other hand, it sometimes produces such a rapid decline of temperature that alarming symptoms of collapse are observed, such as cyanosi; feet, ears, and nose cold; pulse small, and with difficulty felt at the wrist.

The weakness of the heart observed, Dr. Götze ascribes to the reduction of temperature, and not to a direct effect of the drug upon that organ.

The exanthem, which appears as a result of the administration of the drug, the writer has observed, in all in five cases, in all of which the disease was typhus fever, and in which, with one exception, the drug was given in oft-repeated doses of seventy-five grains. Excessive itching in one case accompanied the eruption.

Dr. Götze remarks, in conclusion, that in no case has he observed the course of any disease shortened by the use of antipyrin, and that in severe general infection, not only the fever, but the remaining symptoms fail to be influenced by the drug.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, APRIL 18, 1885.

THE CORROSIVE SUBLIMATE TREATMENT OF WOUNDS.

WE have on more than one occasion directed attention, in the columns of THE MEDICAL NEWS, to the advantages and risks of corrosive sublimate as a germicide in obstetrical and surgical practice, and we have not hesitated to express the opinion that, when judiciously employed, it constitutes the surest, safest, and most manageable of all antiseptic agents. In obstetric practice, especially, its use by injection has been followed by salivation, vomiting, tenesmus, diarrhoea, erythema, and other signs indicating its toxic action in not a few examples, while acute poisoning, ending in death, has been observed by Schroeder, Stadfeldt, Winter, and Vöhtz. In these cases the solutions varied in strength from 1 to 1500 to 1 to 750, and as toxic symptoms and sudden collapse have been observed in similar cases after the injection of solutions of carbolic acid, we may infer that the puerperal genital tract affords a more favorable condition for the quick and dangerous absorption of these agents than any other cavity of the body or any surgical wound.

The bad effects witnessed by obstetricians have not, as a rule, been seen by surgeons after the use of sublimate, and its safety and efficacy are fully demonstrated by the thirty months' experience of SCHEDE, of Hamburg, whose results are published in *Volkmann's Sammlung Klinische Vorträge*, No. 251, 1885. Thus, of 1286 accidents and surgical wounds, 64, or 5 per cent., were fatal, of which only 1 was due to the toxic effects of the remedy. Of 1222 recoveries, union by the first intention was met with in 935, and by the second intention in 278, the parts

having failed to unite in 9. Of the entire number, 91 were major amputations, inclusive of 6 at the hip-joint; 117 were resections of the larger joints; 24 were resections of the continuity of the bones; 81 were osteotomies; 16 were cuneiform tarsotomies; 17 were complicated fractures of the skull; 74 were complicated fractures of the long bones; 69 were examples of irrigation of the joints for dropsy, supuration, and effusion of blood; 13 were cases of drainage of joints; and 84 were herniotomies and operations for the radical cure of hernia. There were, also, 25 ovariectomies, 8 vaginal hysterectomies, 3 nephrectomies, 8 resections of the intestine, 52 amputations of the breast, 162 extirpations of lymphatic tumors and glands, and 149 excisions of other neoplasms.

These results, and we believe them to be the best attained by any surgeon, were brought about by the use of a 1 to 1000 solution for the hands of the operator, the skin of the patient, the sponges, and the drainage-tubes, of a 1 to 5000 solution for irrigation of the wound, and an outer dressing of moss wrung out of a 1 to 500 solution and enclosed in gauze wrung out of a 1 to 200 solution of glycerine and water. Although the glycerine doubtless mitigated the action of the sublimate in the gauze applied over the wound, we believe that the strength used was accountable for the not infrequent excoriation and pustules seen at the first change of the dressing. In four cases an eruption, precisely similar to that of scarlatina, was met with, which was attended with a severe burning pain, and exhibited a tendency to diffuse itself over the entire body. In only one instance, the case being that of an anæmic female in whom supravaginal hysterectomy was practised, was death due to the agent. The single death out of 1286 cases cannot, however, be used as an argument against the use of the corrosive chloride of mercury, when we consider the number of lives that must have been sacrificed had it not been used.

In connection with the experience of Schede, we trust that the surgeons of the New York Hospital may be induced to publish an account of their mode of employing corrosive sublimate, since DR. PEABODY, Pathologist to the Charity, states, in *The Medical Record* for March 14, that the records of that institution show eleven cases of poisoning, with seven deaths, during the past eighteen months. The case of opening a suprahepatic cyst may, we think, very properly be excluded, as the patient suffered from nausea, headache, and partial suppression of urine before the use of the bichloride, and the sac was irrigated with a 1 to 5000 solution. Of the remaining six, one was a compound fracture of the bones of the leg, with amputation four days after the treatment was begun; three were abscess cavities; one was an amputation of the breast with removal of the axillary contents, and one

was a laparotomy for uterine myoma. In the first case a 1 to 1000 solution was employed; in the remainder a 1 to 2000 solution was used. If the irrigation was resorted to continuously during the operation, we do not hesitate to say that the solutions were too strong, since the continuous washing of the wound is not safe with a solution stronger than 1 to 5000. In the vast majority of operations, indeed, we see no necessity for continuous irrigation with even a weak solution, as a careful washing with a 1 to 1000 solution at the completion of the operation answers every purpose.

REMOVAL OF THE CANCEROUS UTERUS.

THE question of the removal of the cancerous uterus seems very well determined so far as method is concerned, since statistics prove that vaginal extirpation is much less fatal than extirpation by abdominal section. But still the question arises, Is any mode of removal proper?

This subject was recently discussed before the London Obstetrical Society, in a paper by Dr. W. A. DUNCAN, containing the report of two cases in which the operation was done. One of the patients had an epithelioma involving only the anterior lip of the womb. The operation—vaginal removal of the uterus—was done in January, and the patient died in November from reproduction of the cancer immediately above the vaginal vault. This was not a case calling for so dangerous an operation, when the simple removal of the vaginal neck would have taken away all the diseased structure. The second patient died twelve hours after the operation.

In the discussion which the reading of the paper elicited, Dr. John Williams stated that he had done the operation four times, and the only patient who recovered died a month after from fecal fistula. Mr. Knowsley Thornton declared his preference in cancer of the cervix for amputation followed by the application of the chloride of zinc. Mr. Doran in support of the position that there were anatomical reasons against the extirpation of the cancerous uterus, stated that Mierzejewsky and Lebee had shown that in the connective tissue between the body of the uterus and the peritoneum there is a dense network of lymphatics, whilst two wider lymphatic plexuses form a collar round the uterine and vaginal portions of the cervix. The lowest of these communicates freely with the vaginal lymphatics. All these networks form and empty themselves into three large trunks running to the obturator gland, passing along the lower border of the broad ligament. Early enlargement of this gland is observed in cancer of the cervix, and the extension of the disease readily follows. He asserted that it was, therefore, impossible to remove all the affected lymphatics.

Sir Spencer Wells hoped the operation would not be condemned, and thought that there was still much to learn in the details of vaginal hysterectomy; and improvement, both in early diagnosis and in early operation, may give a much lower mortality, retarded return, or even complete recovery. Dr. Edis regarded hysterectomy for cancer justifiable by a mortality of only 28.6, which was no greater than that of ovariectomy in the early days.

A very valuable contribution to this subject may be found in a late number of the *Zeitschrift für Geburtshilfe und Gynäkologie*, by HOFMEIER. It embraces a period of ten years, and includes 812 cases. Comparing these figures with the numbers of all female patients with disease of the genital organs found respectively in private and in hospital practice, it is shown that cancer is much more frequent in the working class. It is also shown that since twenty-one per cent. of those affected were nulliparæ, the importance given by some to tears of the neck of the womb in childbirth in the etiology of the disease is exaggerated, if not doubtful.

In nearly one-half of the cases the part of the uterus first affected was not known, but in the others it was found that this was most frequently the vaginal portion of the neck, the neck next, while in only 3.4 per cent. was the disease primarily in the body of the womb. The average ages of these three classes were forty-two, forty-seven, and fifty-two and a half years. In 160 cases, or 19 per cent., the radical cure was attempted. When the disease affected the vaginal portion of the cervix, supravaginal amputation was done through the vagina; in cancer of the body of the cervix, extirpation of the uterus, at first by Freund's, later by Czerny's method was performed; while in cancer of the body, abdominal supravaginal amputation was selected. 19 per cent. of the patients died in consequence of the operation, the mortality being, for example, as high as 62 per cent. in Freund's method, while vaginal extirpations gave only 26 per cent. of deaths. It may be stated, in this connection, that Staude, of Hamburg, according to the *Centralblatt für Gynäkologie*, has had sixteen vaginal extirpations of the uterus without a single death.

Hofmeier's statistics show that after two years 80 per cent. of those treated by supravaginal abdominal amputation remained well, 33 per cent. each after Freund's operation and after vaginal extirpation, 32 per cent. after supravaginal and vaginal amputation, and 42 per cent. after amputation by the actual cautery. After four and five years there were respectively eight and three per cent. who remained free from return of the disease.

The subject has recently been discussed by the Paris Academy of Surgery, according to the *Journal d'Accouchements* for February, in connection with a report of two cases by Terrier in which he had per-

formed vaginal hysterectomy, one of the patients dying, the other recovering. Desprès took the ground that the operation was impracticable, and that survival proved the disease was not cancer. Berger stated that even in Germany there was a current of opposition to the operation, the return of the disease being so frequent that the chances of success did not balance the dangers of the operation. He called attention to a case recently operated upon by Boeckel in which a wound of the ureter required nephrectomy, and a return of the disease occurred in three months. Polaillon asserted that cancer of the neck rarely involved the body of the womb, and referred to two cases in which the diagnosis was made by Cornil, one patient surviving two, the other five years. Of course, as observed by Terrier, when an error in diagnosis, or the impracticability of the operation was asserted by Desprès, discussion was at an end.

In the *Gazette Médicale de Paris* of February 14th and 21st, Sébilleau gives a much more favorable view of the subject. He holds that the operation should be performed, because, if it be not, certain death, ordinarily very rapid from the progress of the disease, very severe suffering, and disgusting infirmity, making life utterly miserable, are sure to ensue. After the operation, in some cases there is a long survival, in some cases the radical cure results, and if the disease returns, lessening of pain and of accidents ensues. In each case physical comfort and moral calm for some months are obtained. On the other hand, the reasons against the operation are its inutility, the disease often returning, and its dangers and difficulties. As stated by Sébilleau, these questions must be determined by statistics; so far as the mortality of the operation is concerned, those of Demons and Doche show that it is only 28 per cent.

He observes that the question of colpohysterectomy, reserved for cases in which amputation of the neck was not possible, has been settled in the affirmative in Germany and Italy, and suggests that this will probably soon be the case in France.

We have thus presented the most recent views—British, German, and French—upon this question. We need only add, using the language of Sir Spencer Wells, that the operation should not be condemned. The weight of testimony so far is in its favor, but it must be remembered that the extirpation of the uterus is not to be done when the disease is limited to the intravaginal neck, for then amputation is the proper operation. Moreover, as stated by Hegar and Kaltenbach, the uterus must be quite mobile, bimanual examination should prove that there is no infiltration in the vagina, the broad and the utero-sacral ligaments, and there should not be in the pelvic connective tissue any bead-like nodosities.

IDENTITY OF MICROCOCCI IN DIFFERENT DISEASES.

It must be a relief to those who have been confused, if not confounded, by the many diseases alleged to be dependent upon different microscopic organisms, to learn that the same micrococcus has been found in different diseases; thus AUFRECHT, of Magdeburg, according to the *Revue Médico-Chirurgicale des Maladies des Femmes* for January, stated at the last meeting of the German Society of Naturalists and Physicians, that in croup, diphtheria, and pneumonia, the micrococcus was identical. Further, in a case of diphtheritic endometritis he found the same micrococci as in pneumonia. In two patients who had pneumonia, one in the sixth, the other in the eighth month of pregnancy, one dying two days after miscarriage, the other three days after premature labor, there was found in each, at the placental site, a diphtheritic endometritis, and the same micrococci were observed in the first case. Experiments were made upon pregnant rabbits by injecting a solution made from a portion of the triturated pneumonic lung; the animals miscarried and died, and the pus found in the pericardium, peritoneum, and at the placental site, contained micrococci similar to those found in pneumonia. The same results were obtained when pneumonic sputa were used, instead of the lung tissue, thus proving that the cause did not arise from post-mortem changes. The liquid obtained from trituration of a fragment of the liver of a rabbit destroyed as stated, was injected into another pregnant rabbit, and with the same effect. On the other hand, when solutions containing the bacteria of putrefaction were injected, only a local abscess resulted.

If the identity of the micrococcus of pneumonia, of diphtheria, and of puerperal fever be admitted, it is possible, as many have held, that puerperal infection may occur through the respiratory organs. Certainly this hypothesis might explain the occurrence of some of the cases of so-called autogenetic puerperal septicæmia. As held by Aufrecht, this much is plain, that lying-in women should be separated from patients suffering with croup, diphtheria, or pneumonia.

We may add that Hartz stated that the same diplococcus is found in cerebro-spinal meningitis as in diphtheria.

HOUSE-TO-HOUSE INSPECTION.

HOUSE-TO-HOUSE inspection for the purpose of discovering and correcting sanitary defects on private premises is just the kind of work that should be undertaken and vigorously pursued at the present time, not only in anticipation of cholera but of other diseases of the preventable class, which have their contributing or predisposing cause in filth. The most essential condition in the prevention of these diseases is cleanliness, and this can be enforced on

private premises in no better way than by a rigid inspection of every nook and corner of the domiciles of the people. A number of cities have already organized a plan of domiciliary visitations, and, in one notable instance, that of Illinois, a sanitary inspection of this character has been instituted for an entire State.

While carrying on this commendable work upon private premises, the sanitary authorities should not overlook the dangers to the public health that are liable to arise from the want of a pure water-supply, from neglect to provide for the proper cleanliness of the public ways and places, for the prompt and complete removal of refuse matters, for the removal of all effluvia nuisances, and for the careful inspection of the food supplies. There should be no delay in inquiring into the efficiency of existing arrangements, and in correcting defects and supplying deficiencies wherever discovered. A judicious, energetic, and extended effort made at the present time by the sanitary authorities in behalf of the preservation of the public health, will certainly reduce the quantity of preventable disease, if it do not entirely avert an epidemic visitation. But something more than a mere spasmodic effort is required to secure durable results. Persistent activity is necessary in order to make headway against the constantly recurring causes of preventable disease.

Preparation should also be made to meet promptly the incipient cases of epidemic disease, so as to limit its progress, if not to stamp it out at once. Provision for medical supervision and the isolation of these cases, and the disinfection of clothing, house, and premises should be prearranged, so that no valuable time may be lost. In the event of an outbreak of sickness, house-to-house visitations by medical officers in districts where there is a suspicion of the concealment of cases will be of great advantage in checking the spread of disease.

LAPAROTOMY IN ACUTE PERITONITIS.

At a recent meeting of the Royal Medical and Chirurgical Society, the proceedings of which may be found in the *British Medical Journal* for March 14th, Mr. TREVES reported the case of a woman, twenty-one years of age, in which the belly was successfully opened and freely irrigated with water, and a drainage tube inserted, on account of diffused peritonitis, the result of the bursting of a pelvic abscess. Mr. Marsh also read the notes of a case of a medical student, nineteen years of age, suffering from critical symptoms of sudden and acute peritoneal inflammation, in which incision gave vent to about two pints of fetid pus. The abdomen was thoroughly washed out with a 1 to 60 solution of carbolic acid, and a drainage tube introduced. Under subsequent

injections of a solution of iodine, 1 to 1000, the patient recovered.

In the discussion which followed the reading of Treves's paper, Bryant, Thornton, Powell, Barwell, Goodhart, and Meredith were in perfect accord in commending the practice carried out in the two cases noted. The conviction, indeed, appears to be gaining ground that, in view of the great fatality of acute diffused peritonitis, and the futility of ordinary modes of treatment, laparotomy should be resorted to, thereby placing effusions into the peritoneal cavity on the same footing as pleural effusions. Its success in cases of peritonitis complicated by the presence of an ovarian tumor has long been established; and Mr. Lawson Tait states, in the *British Medical Journal* for March 21st, that he has opened the abdomen in not less than 44 cases on account of peritonitis, and that 41 recovered.

In support of the wisdom of the practice, we may refer to a successful laparotomy, reported by Mikulicz, at the *Versammlung der Deutscher Naturforscher und Aerzte in Magdeburg*, September, 1884, for suppurative peritonitis, the result of a perforating typhoid ulcer. Krönlein, too, has resorted to it for peritonitis due to perforation of the vermiform appendix, but with what result we are not informed. Indeed, we believe that we express the opinion of all thoughtful surgeons when we say that the operation is indicated in all cases of suppurative peritonitis from whatever cause it may arise, as well as in examples of ordinary acute peritonitis, the result of perforating lesions of the stomach and intestines.

THE AMERICAN MEDICAL ASSOCIATION.

SIXTEEN years ago the American Medical Association met in New Orleans, and in a short time it will again convene in the great commercial city of the South. The number in attendance at the former meeting was by no means as large as probably will be present at this. Then desolated homes and shattered fortunes demanded too much of the time of many Southern physicians to permit their attendance, while others had not yet sufficiently buried war memories to clasp hands in cordial greeting with their brothers of the North, so that many of each section failed to be present. But now no such obstacles are presented; we are once more heartily one people, and one profession. The Exposition too, will take many a doctor to New Orleans who otherwise might wait until the Association met nearer home. All things considered, we believe that the coming meeting will be well attended, and trust that its deliberations will result in good to the profession.

Just before the last meeting of the American Medical Association THE NEWS urged the importance of allowing each Section to select its own pre-

siding officers, instead of this being done by the General Nominating Committee. At this meeting, Dr. Foster Pratt, of Michigan, presented an amendment authorizing this change, and action upon it will be had at the coming New Orleans meeting.

We cannot believe any reasonable objection will be made to the adoption of the new plan, while the arguments in its favor are strong, and should not be neglected by those who are sincerely concerned for the welfare of the Association. Without referring to the evils which have in some instances resulted from the method hitherto pursued in the selection of these officers, it will be readily admitted that those who form a Section, are present at its meetings and participate in its work, are the best qualified to judge as to the men most worthy of its honors, most suitable to conduct its deliberations, and most acceptable to those whose affairs they conduct. The best men should be given office, instead of the offices being sought, and in some instances secured, by active, obtrusive medical politicians, while abler, but more modest men, men who truly represent the profession, are left in the background.

REVIEWS.

LECTURES ON DISEASES OF THE RECTUM. Delivered at the Medical Department of the University of New York. By J. WILLISTON WRIGHT, M.D., Professor of Surgery. 8vo., pp. vi. 170. New York: Birmingham & Co., 1884.

THIS little book is full of excellent advice in regard to the treatment of diseases of the lower end of the bowel, and can be commended as plain, practical, and full of common sense. The author's style is about what one might expect in printed lectures, and bears the mark of the intimacy and familiarity which usually exist between the professor and his pupils. This, in our opinion, however entertaining it may be in the lecture-room, is out of place in a book. Occasionally one finds lecturers who are such Chrysostoms that it would be impossible to improve on their style in their most unpremeditated lectures; but often, we believe, the records of a stenographer would prove rather shocking to a clinical lecturer. For, even when no great literary faults would be found, the freedom from restraint which often adds a decided charm to one who speaks "*en famille*," as it were, to a medical class, looks like looseness when it attains the publicity of print. Sometimes, indeed, there is a real laxness in a lecturer's style, and when his lectures are published one meets with expressions in them which are of questionable taste anywhere, and are decidedly indelicate in a book.

It is to be regretted that the useful and instructive book before us is open to this objection. It may have added to the author's attractiveness as a lecturer in the mind of the medical student, to speak of the "scratcher-animal muscles," but the use of such an expression detracts from his dignity as an author, when it is made indelible in print. We think, further, that when he

comes to reflect upon it he will wish he had not printed the story on page 96, in which a joke is repeated which we think it is not too severe to call vulgar. This tendency to be funny, which is illustrated in other parts of the author's lectures is a very dangerous one, and especially dangerous in one who is discussing such delicate subjects as medical books sometimes treat of. Witticisms about parts or functions of the body which are unmentionable in polite society, are much admired by a certain sort of people, and will doubtless be supplied as long as there is an active demand for them. But we believe that, for a right-minded man, it can only be a slip which leads him to seem of this sort, and that to call his attention to the matter would always suffice to prevent his making a similar mistake in the future.

In the case before us it is to be hoped that the merits of these lectures will so commend them to the medical public that the author will shortly have an opportunity, in a second edition, to redeem them from the only blemish worth mentioning which we believe them to have.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, April 2, 1885.

THE PRESIDENT, B. F. BAER, M.D.,
IN THE CHAIR.

THE PRESIDENT exhibited the specimen and reported the case of a rapidly growing

OVARIAN CYST.

A patient of Dr. A. G. Walls, of Lock Haven, Pa., M. L., æt. 26, single, puberty at fourteen, always well, and possessed of a remarkably fine physique, tall and robust, felt some pain and uneasiness in the ovarian region three months ago. She was examined by Dr. Walls, who found the right ovary enlarged to the size of a large orange. She soon after found that her abdomen was increasing in size.

On March 9th, I saw her. She was beginning to show facial signs of ovarian disease in slight emaciation, pallor, and the peculiar distress of countenance. The menses were regular, the abdomen was distended to the size of the eighth month of pregnancy and was perfectly symmetrical, pyriform in shape, dull on percussion with a resonant corona, extending around from one flank to the other, and there was marked fluctuation. Vagina virginal, cervix uteri pointing slightly forwards, body retroverted and mobile. The lower border of the abdominal tumor could be touched per vaginam. The uterus was not affected by the movement of the tumor. *Diagnosis:* Ovarian cystoma. Immediate removal advised. *Operation:* Assisted by Drs. Walls, Hayes, and Lichtenthaler, in the presence of Drs. Watson and Ball. Incision two and a half inches, fat in abdominal wall at least an inch in thickness. Tapped the cyst, which contained a bucketful of a thick fluid the color of pus. Removed the collapsed tumor through the small incision—there were no adhesions—ligatured the short pedicle and dropped it. The left ovary was found to be as large as a walnut and undergoing polycystic degeneration; it was also removed. The incision was closed

with six silk sutures. The patient recovered without an untoward symptom.

The rapidity of the development of this tumor was remarkable, and justified me in bringing it before you. The other ovary is a beautiful specimen of beginning polycystic disease. It is a curious fact that of my last six ovariectomies in not one of them did the period of development extend over nine months from the time the disease was first discovered. One of them only three months, as just reported, from the time it was found by Dr. Walls to be the size of an orange. They were all good-sized tumors, two of them weighing nearly forty pounds each.

THE BROMIDE OF ETHYL AS AN ANÆSTHETIC IN LABOR.

DR. MONTGOMERY reviewing the various anæsthetics, said chloroform is objectionable in that it causes inertia uteri and tedious labor, and increases the danger of post-partum hemorrhage. The relatively infrequent fatal cases under its use in surgical practice and the still more rarely serious results from its use in obstetrics, forbid its habitual use. The use of ether in natural labor is infrequent, because to relieve pain the patient must be profoundly etherized. Partial etherization destroys the ability to bear pain without obtunding sensation. Besides, Tait has demonstrated that ether passes rapidly into the circulation of the fœtus, endangering its existence. The mixture of nitrous oxide and air, advocated by Kliekowsch, requires a special apparatus and is unwieldy. The ideal anæsthetic is one that is safe for mother and child, certain in its effects, rapid in relieving pain without producing loss of consciousness, and whose effects pass off quickly. All these demands are met by the bromide of ethyl. He enumerated 112 cases in which it had been used, twenty-nine of which were in his own practice; none of the mothers died, and but three of the children. In none of the latter could death be attributed to its use. It was administered during the second stage of labor by placing a napkin, wet with a few drops of the ethyl, over the face of the patient at the advent of each pain and withdrawing it as the pain subsided. Unless a drachm was used, the sensation of pain was obtunded without arresting consciousness. The process of labor was carried forward, vigorously, and quietly, the patient ready to exert or withhold voluntary aid as her attendant might direct, and the expulsion of the head was attended by no greater pain than accompanies the evacuation of obstinately constipated bowels. His experience did not lead him to believe that its use would induce inertia uteri or increase the tendency to post-partum hemorrhage.

DR. D. M. BARR is much interested in this subject, and thinks, from this report, that the indications for the usefulness of bromide of ethyl are favorable. He would like to know to what degree the patient returned to consciousness between pains. He will use bromide of ethyl as an experiment, but he will say here that his old combination still gives him the very best effects with perfect safety. He has continued to use it in almost every case of labor since his report on anæsthetics in labor, see *Medical and Surgical Reporter*, March 13, 1880. He would feel some hesitation in using the bromide of ethyl, as it is dangerous, even if not so much so as chloroform. How would it act if mixed with ether?

The objectionable qualities of chloroform and ether balance and overcome each other, and the addition of alcohol to the mixture prevents their explosive action, so to say; that is, the sudden effect of a full and deep inspiration of the strong vapor of the anæsthetic is prevented by the admixture of alcohol in the proportion of: Chloroform, one part, by measure; ether, three parts; and alcohol, two parts. If a portion of this mixture be placed in a saucer and heated, it will all evaporate together; the ether does not pass off from the alcohol. This mixture soothes the pain and makes the patient happy. The excited or drunken stage of ether is avoided; the danger of chloroform is avoided; unconsciousness is unnecessary, and is not produced. If bromide of ethyl has any of the dangers of chloroform, they are unchecked by admixture with correcting agents. Dr. Barr related the particulars of a case in which he had employed this mixture to show how kindly it acted in presence of suspected functional heart disease. In this case its administration was continued for nine hours; the pain was relieved, there was no vomiting, no effect upon the pulse.

DR. R. P. HARRIS remarked that chloroform was considered perfectly safe as an anæsthetic in labor. Playfair, in his last book, advocates it on this ground; but there have been fatal cases. The danger of an anæsthetic can only be ascertained after it has been used and reported by many observers, so as to get an average. Some men are careful and cautious, but all are not. The use of mixed anæsthetics is becoming more general in England.

DR. W. M. WELSH, upon invitation, remarked that he had had no experience with bromide of ethyl and but very little with other anæsthetics. He had given ether in one case, and a troublesome condition of intoxication had been developed. He was applying the forceps, and the patient suddenly seized one blade and wrenching it out of the vagina tore the vulva. He prefers to get along without the use of anæsthetics.

DR. HENRY LEAMAN, upon invitation, said that he also had no experience with the bromide of ethyl. He does not hesitate to use ether in bad cases of labor, but he does not employ it when he can avoid it. He is not yet convinced that the use of anæsthetics in natural labor is advisable. There has not yet been formulated a satisfactory definition of natural labor. He is now engaged in studying that subject. He has observed in private practice most of the positions described by Engelmann in his papers on primitive obstetric practice. The sympathetic system in labor reacts upon the cerebro-spinal system and produces the condition of nervous excitement which is seen in the patient, and which often extends to the friends of the patient and even to the doctor in charge of the case. After a close observation of over six hundred cases, he thinks labor can be as natural a physiological operation as respiration or the circulation of the blood, or any other function of the body, with this one difference, that whereas the ordinary performance of function is pleasurable, in labor pleasure is replaced by pain. He is not in favor of the use of anæsthetics merely to remove or obtund this pain, as it is natural; and anæsthetics may interfere with the natural process and cause relaxation or retard involution, resulting in that root of endless misery, a subinvolted uterus.

Dr. Leaman has been making careful studies with a dynamometer, which measures the available pressure. He believes that it gives the sum of the pressure applied to the ovum expressed in the projection of the advancing part, against which it rests. He will continue these studies, which are not yet complete. The force of the accessory muscles, as the diaphragm and abdominal muscles, takes no real part in the expulsion of the fœtus, but merely embraces the uterus, preventing any rebound or loss of force when the ovum impinges against the pelvic walls or perineum, their action being to sustain or hold the uterus closely to its work. The entire force exerted is not nearly so great as is usually supposed. The force of labor does not exceed that of arterial pressure, which, I think, is about six pounds. The exit of the child is not violent, but gradual. It is a popular belief that a majority of labors occur at night, but, of his six hundred carefully recorded cases, an equal number were born between 6 A.M. and 6 P.M. and between 6 P.M. and 6 A.M. There are, however, two acmes, one at 11 P.M. and another between 7 and 8 A.M. These two periods correspond to the times of greatest blood-pressure. He ranges himself on the side of those who believe in the non-necessity of the use of anæsthetics in natural labor.

DR. W. H. PARISH would like to hear more particularly from Dr. Montgomery in his closing remarks respecting the safety of bromide of ethyl as an anæsthetic. A few years ago it was introduced into surgical practice in this city, and was abandoned in consequence of its dangerous character. If it is dangerous in surgery, why should it not be so also in obstetrics? Chloroform which was at one time considered perfectly harmless in the latter class, has been found to be no safer there than in ordinary cases.

He has established for himself three rules respecting the use of anæsthetics in obstetric cases:

1st. In any normal cases no anæsthetic is required.
2d. If the patient is nervous, excited, and uncontrollable, he gives chloroform at the incipency of each pain, to quit the excitability of the patient and take off the sharpness of the pain without producing unconsciousness; during the intervals between pains the chloroform is withheld.

3d. Whenever he considers that unconsciousness, full anæsthesia, is necessary, he employs ether, so as to avoid the depressing effects of chloroform. Bromide of ethyl might be used in place of chloroform, as indicated in his second rule, if shown to be equally safe; but he would not consider it proper to use it to produce complete relaxation as required for version or the application of the forceps. Prof. Wood, in his experiments, found bromide of ethyl more dangerous than chloroform. Dr. Parish does not now use it, and he fears it would go hard with any physician before our courts if he had a fatal accident occur during its use.

DR. BARR thought Dr. Leaman's estimate of the force required to extrude a full term fœtus far below the mark. A child weighing seven pounds or over is pushed through a curved, horizontal, resisting passage, with irresistible power, and sometimes rapidity. A force of six pounds would not lacerate a perineum. In some cases there is but slight resistance, and the force required is small and the pain not severe. He has seen cows moaning from the severity of their pains

during parturition. In one case recently, a cat was delivered of its first kitten after severe and prolonged pain, and the second kitten required three hours for its extrusion. The pains of labor are more easily alleviated than the pains of surgery by anæsthetics, and with no increase, if not a diminution, of danger.

DR. MONTGOMERY, in closing, said that as to danger from the use of bromide of ethyl, he thought there was no danger if a pure article was carefully used. The patient is not completely narcotized, consciousness is not lost, the administration of the drug is interrupted. The patient can coöperate, although relieved of suffering. She can answer questions. Prof. Müller is the only one who has failed in obtaining good effects, and this was probably due to impurity in the drug. Bromide of ethyl does not take the place of chloroform, nor does it produce muscular relaxation, nor relaxation of the uterus as required in version. It can be pushed to complete unconsciousness, but that is not necessary, as pain will be relieved without, while the contractions of the uterus and respiratory muscles are fully as effective as without it. Labor is undoubtedly a physiological process as much so as respiration or defecation, but it does hurt. It is the type of the most severe and agonizing suffering, and we as physicians are called on to relieve that suffering and prevent the waste of vital force to the extent that we can by preventing pain, long-continued pain. Bromide of ethyl is apparently entirely safe when given as I have used it. Experimental physiologists do not all agree with Prof. Wood as to the comparative danger of this and other anæsthetics.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, March 24, 1885.

THE PRESIDENT, R. F. WEIR, M.D., IN THE CHAIR.

NECROSIS OF THE LOWER PORTION OF THE FEMUR;
EPITHELIOMA; AMPUTATION.

DR. MCBURNEY presented a specimen removed by amputation from a man thirty-five years of age, who had his first periostitis twenty-eight years previously. The bone was the seat of necrosis, as shown by the presence of a sequestrum projecting from the inner side of the thigh, and for a period of nine and a half years he had escaped surgical treatment. Sinuses had formed at different points, and finally an epitheliomatous mass developed at the inner side of the thigh, some four or five inches in diameter, through which the sequestrum protruded. There was great dislocation of the leg backwards, and the limb was useless. On dissection the artery was found lying in absolute contact with the specimen of dead bone. Fortunately no one had made sufficient strain upon it to cause hemorrhage.

DR. POST remarked that probably if the sequestrum had been discovered and removed, the epithelioma would not have developed. Several years ago he saw a case of epithelioma, the result of a wound of the leg which had been received in the war, and which had remained unhealed.

THE PRESIDENT remarked that he thought all had seen instances of epitheliomatous growth from long-continued bone injuries at the lower or middle portion of the tibia, but Dr. McBurney's specimen was the first

which he had seen where epithelioma under such circumstances had invaded the thigh.

FRACTURE OF THE PATELLA.

DR. SANDS was called in consultation three days ago to see a lady who had received, ten days previously, an injury while getting off a railroad car in the Grand Central Depot. She stepped from the car to the platform, which, she says, was an unusual distance, and alighted upon the right foot. She was aware that she had received some injury by feeling a sharp pain which almost caused fainting, and by hearing and feeling something snap. She did not fall, and was certain that she did not strike her knee. She was able to walk a considerable distance—nearly the length of the depot—where she was met by a relative who escorted her to her carriage, in which she was driven home. She was able to ascend the steps without much assistance, and was helped upstairs to her bedroom in a similar way. On the following day, she sent for her physician, who found a great deal of swelling in the lower part of the thigh, from extravasation of blood, and also a considerable effusion into the knee-joint. Ten days afterward the effusion into the knee-joint had subsided, the ecchymosis had disappeared, and a fracture of the patella was discovered. Dr. Sands saw the patient, and found that the fragments were separated to the extent of half an inch. A singular feature of the case was that the fracture, which ran through the middle of the bone, was not transverse, but diagonal, running from above downward and inward.

This was the only case in Dr. Sands's experience in which he had ever known a person to fracture the patella completely and to be able to walk immediately afterward, and he would like to know the observations of the members of the Society on that point.

The other fact which was interesting was that the fracture was evidently produced by muscular violence, and that it should show the obliquity noticed in the present case.

DR. L. A. STIMSON had a case, three or four years ago, in which oblique fracture of the patella took place, as in Dr. Sands's case, and in which, also, the fracture was produced by muscular action. He did not remember that the patient was able to walk. The line of fracture ran from the outer upper angle downward to a point below the equator. Dr. Stimson remarked that it had been stated in text-books that patients with fracture of the patella could walk backward.

THE PRESIDENT remembered one case in which a man fractured the upper portion of the patella, and who walked upstairs; whether the fracture was transverse or not, he was unable to recall.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, March 25, 1885.

T. G. RODDICK, M.D., IN THE CHAIR.

DR. FRANCIS I. SHEPHERD read a paper on

THE MUSCULUS STERNALIS AND ITS OCCURRENCE IN ANENCEPHALOUS MONSTERS.

He stated that the musculus sternalis was a supernumerary muscle which has always excited a great deal of interest among anatomists, and that its proper morpho-

logical significance was not yet fully determined. It was seen in about three or four per cent. of ordinary individuals, and its fibres generally ran at right angles and superficial to the great pectoral. It was often bilateral but most frequently unilateral, and was subject to many variations. Frequently it had no attachment to bone, but lay superficial to the great pectoral and was attached at either end to fascia. It often was inserted into the costal cartilages. It might be continuous above with the sternal origin of the sterno-mastoid, and below with the fascia of the external abdominal oblique. Again, it might be continuous with the pectoralis major and be associated with deficiency of that muscle. It was often of small size, but occasionally it was quite a strong muscle, and could be seen under the skin in the living. Dr. Shepherd had seen it measuring five inches long, two and a half inches broad, and two a half inches thick. For years it was considered to be a remnant of the rectus abdominis, which in many animals extends from the pubis to the top of the sternum, and was called the "*sternalis brutorum*." This view had long ago been given up because the rectus abdominis lies in a plane deeper than the great pectoral, and is never superficial to it. Bourienne many years ago held that it was a prolongation downwards of the sterno-mastoid, a view still held by Henle and others. Hallett and Wilde regarded it as belonging to the same group of muscles as the platysma, and Prof. Turner, of Edinburgh, considered it to be one of the representatives in man of the great panniculus group which exists in most mammals. Darwin also held this view in his work on the *Descent of Man*, after referring to the views of Prof. Halbertsma, M. Testut, and Prof. Bardeleben.

Dr. Shepherd stated that Prof. Cunningham, of Dublin, had lately in five cases traced the nerve supply of the musculus sternalis to the anterior thoracic nerve, and that he, believing that the nerve supply was the best indication for the proper classification of muscles considered that the musculus sternalis belonged to the pectoral group. Prof. Cunningham also suggested that this was a new inspiratory muscle appearing in man, and that it was his impression that it occurred more frequently in females, due possibly to costal inspiration being more pronounced in them. Mr. Abraham, of Dublin, first pointed out, last year, that this muscle was very common in anencephalous monsters, as he had found it in six out of eleven specimens examined. Mr. Abraham looked upon it as probably an aberrant portion of the great pectoral muscle.

Dr. Shepherd said he had examined six anencephalous monsters which were in the Museum of the Medical School of McGill University, and wished to place the results of his dissection before the Society.¹ In each monster he had found a well-developed musculus sternalis. In three the muscle was double. In two continuous above with the sterno-mastoid, and in several it arose from the manubrium sterni and was inserted into the costal cartilages. In all the cases there was a deficiency of the great pectoral muscle on the side where the supernumerary muscle was found, the abnormal muscle apparently taking the place of the absent portion of the pectoral. In several the muscle was of

¹ The specimens were exhibited to the Society after the reading of the paper.

large size, and in part continuous with the fibres of the great pectoral. Nine muscles, in all, were found in six monsters, as three had double muscles. Dr. Shepherd had successfully traced the nerve supply of these muscles in all but two, that is, seven of the muscles were supplied by the anterior thoracic nerve, the nerve entered the muscle in its deep surface and could be traced back over the lesser pectoral through the costocoracoid membrane to the internal anterior thoracic nerve.

Dr. Shepherd remarked that it was a curious fact that this muscle should be supplied by a nerve which is at so great a distance from it, and not by the intercostal nerve, which in several cases pierced the abnormal muscle without giving any branches to it. He also stated that he had formerly held that the *musculus sternalis* belonged to the panniculus group, but that these dissections had caused him to alter entirely his previous views as to its homology, and that now he had little doubt that this muscle belonged to the pectoral group because: 1. Its nerve supply. 2. When present the great pectoral is generally deficient. 3. Its continuity in many cases with the great pectoral. 4. That it was in the same muscular plane as the great pectoral. Dr. Shepherd said that it was his belief that the nerve supply was the best guide we possessed for determining the homology of a muscle.

Dr. Shepherd was unable to explain why this muscle should be so common in anencephalous monsters, except that in these undeveloped beings there was a greater tendency to revert to previous conditions; but he said it was difficult to reconcile the fact that this muscle was an aberrant portion of the great pectoral and a reversion to some preëxisting muscle, as no known existing arrangement of the pectoral group in the lower animals at all resembles the condition found in these monsters. He also stated that if this muscle was an aberrant portion of the great pectoral which had no animal representative, then Prof. Cunningham's theory that it was a new muscle appearing in man had some degree of probability. Dr. Shepherd said he was not prepared to accept this explanation, but awaited further light and further knowledge of comparative anatomy before pronouncing definitely on the morphological significance of the *musculus sternalis*.

CORRESPONDENCE.

ON THE STAMPING OUT OF
EPIDEMIC CHOLERA
IN THE CITY OF NEW YORK IN 1866 AND 1867.
To the Editor of THE MEDICAL NEWS.

SIR: In 1866 and 1867 epidemic cholera in the city of New York was effectually stamped out by disinfecting and other measures employed to prevent the diffusion of the disease. These measures were adopted by the Metropolitan Board of Health, which had recently been organized. They were carried out under the direction of the late lamented Edward B. Dalton, who had been appointed by the Board Sanitary Superintendent. With regard to their success, I quote a paragraph from a paper which I read at a meeting of the New York County Medical Association in October last, as follows: "My belief is that never before nor

since, in any other part of this or in any other country, have measures for the prevention of epidemic cholera been devised so scientifically, so thoroughly carried out, and so successful in their results as those employed by the Metropolitan Board of Health in 1866 and 1867. They should be cited throughout the world as evidence that epidemic cholera is a disease which may be stamped out by efficient sanitary measures efficiently employed. I believe firmly that, should the disease be again introduced into this country, to decide whether or not it shall prevail as an epidemic, lies within the power of preventive medicine."

The results of the preventive measures in 1866 were stated by the late Elisha Harris in his report as Registrar of Vital Statistics, as follows:

"In houses and localities where well-marked first cases were not promptly treated by local cleansing and specific disinfection, cholera soon gained a foothold as a local epidemic, and we have found no large group of fatal cases in which this was not true; while in a great number of instances where the disinfection was prompt and adequate, *the arrest of cholera in the very worst localities and the worst houses and population was immediate and final.*"

"In three hundred and sixty-two houses where individuals or families were smitten with cholera, but which were promptly brought under full sanitary control by disinfection and sanitary purification, the pestilence *did not extend beyond the family in which the first case occurred.*"

Certainly no facts could demonstrate more conclusively than these that epidemic cholera was stamped out in the city of New York in 1866.

In 1867, cases of cholera again occurred in the city of New York. With regard to the stamping out of the disease in that year, I quote the following from the report of Jackson S. Schultz, President of the Board of Health: "Twenty-seven deaths from cholera have occurred during the past year in the city of New York, five in the city of Brooklyn, and eighteen at the military post in the harbor. The disease has not excited public alarm, and never approached the character of a general epidemic. The means used to combat it were the same as those employed in the year 1866. Wherever a case occurred the Disinfecting Corps cleansed the buildings, or fumigated them with sulphur, and destroyed the clothing, if it could not be disinfected by boiling water, or the permanganate of potash. The experience of another year has confirmed the opinion that active interference by means of disinfectants is the surest way to control and arrest this terrible disease."

The foregoing quotations from the reports of Dr. Harris and Mr. Schultz are contained in the volumes entitled "Report of the Metropolitan Board of Health" for 1866 and 1867. These volumes were published by the State of New York at Albany.

On the basis of the facts contained in these volumes, may it not be claimed, in behalf of the means employed in 1866 and 1867, that, if carried out with equal efficiency, they will prove equally efficacious whenever and wherever epidemic cholera may again appear? Entertaining the conviction that this question may be answered in the affirmative, it seems to me very desirable that a full account of these measures should be available for the medical profession. The volumes of

not be accessible to many, and, therefore, I am led to suggest the publication of extracts from the report of the Board of Health by Dr. Dalton, embracing a detailed account of the measures, which, under his admirable direction, were carried out faithfully, and the success of which renders them immensely important in view of the probability that they may soon be called into requisition.

Yours truly,

AUSTIN FLINT, M.D.

NEW YORK, April 14, 1885.

Extract from the report of the late Edward B. Dalton, Sanitary Superintendent to the Metropolitan Board of Health, November 1, 1866.

"A large quantity of chloride of lime, sulphate of iron, and permanganate of potassa, was, therefore, purchased, articles which abundant experience in hospitals, civil, and military, had proved to be most efficient for ordinary disinfection, and the recent use of which abroad had given evidence of a probable efficiency in arresting the progress of cholera. Measures were at once adopted for the constant use of these agents, and a plan was put in force by which every case of cholera, which could be discovered, should be promptly investigated, the patient cared for, and every possible advantage derived from disinfection. All persons were called upon to give intelligence, at once, at the nearest police station, of any case of supposed cholera coming under their notice. The officer in charge of the station-house was to notify the nearest sanitary inspector, and it became the duty of the latter to investigate the case immediately, report its true character by telegraph to the central office, and render such professional aid, and in cases proving to be cholera, direct such measures for preventing the spread of the disease as might be necessary.¹ The office of the Superintendent was now constantly open, and for this purpose four inspectors were detailed for extra duty at night and on Sunday, two of them being on duty at the office on alternate nights and Sundays. It was the duty of these officers to attend to any case which might become known directly to them, or which might be referred to them from a precinct station-house, in case the officer in charge there had failed to find an inspector close at hand.

"Under the direction of the Board, a disinfecting depot and laboratory was established in a building, No. 308 Mulberry St., immediately adjacent to the central office. This depot was placed under the immediate charge of Mr. James A. Christie, late a lieutenant in the army, and who had before the war a practical education as a druggist, assisted by Mr. I. B. Gardner, also a practical druggist. There were employed a number of assistants, all men who had served honorably in the army and navy. A sufficient number of horses and light covered wagons were purchased and kept in a neighboring stable, ready for immediate use.

"The laboratory was constantly used for experiments in the use and combination of various disinfectants, and the men for the proper and faithful application of the same. Both Mr. Christie and his men lodged in the building, and the latter were organized into various squads, or reliefs, for the performance of duty in suc-

cessive portions of the twenty-four hours. This duty, as the season advanced, became of a most laborious and often hazardous character. The men were constantly visiting infected districts, entering the houses there, and handling bedding and clothes soiled by the dejections of cholera patients. They were obliged to disinfect all bodies dead of cholera, and frequently to place them in coffins and remove them to the morgue. To the judgment and devotion of Mr. Christie, and the fidelity of his men, is due the satisfaction which this branch of the business has given."

The process of disinfection consisted in putting sulphate of iron, either in saturated solution, or dry, if used in wet places, where dejections had been deposited. An ordinary privy, six feet in diameter and twelve feet deep, required twenty pounds of the sulphate of iron for its thorough disinfection. All bedding and clothing, soiled or used by the patient, was boiled in a solution of the permanganate of potassa, of the strength of one ounce to five gallons of water, for two hours, and then removed and reboiled in pure water. For purifying the atmosphere of the room without incommoding the patient, chlorine was gradually set free by adding sulphuric acid to a mixture of binoxide of manganese and chloride of sodium (common salt). In addition to these measures, chloride of lime, or Labarraque's solution of chlorinated soda, was scattered freely about the floors of the rooms and halls of the house. Dead bodies were washed in a solution of chloride of lime or chlorinated soda, and then packed in the coffin with chloride of lime.

A large quantity of common lime and charcoal dust was purchased and placed in the branch at the "Five Points," to be used in the general disinfection of filthy localities, without reference to the occurrence of cholera. A number of horses and carts were hired, and a sufficient number of men to furnish each cart with one helper, beside the driver, to distribute the material. This force was placed under the immediate charge of officer Ezekiel Palmer, of the Sanitary Corps of Police, who has conducted this branch of the business throughout the season with great judgment and fidelity. The plan adopted was to pass through each street in the filthy portions of the city once, and in some instances twice, in each week, and sprinkle the disinfectants freely along the gutters and throughout the alleys and yards, and deposit a certain amount in each garbage box, privy, and filthy cellar. Now and then a few loads of sulphate of iron and chloride of lime were used in the worst places. At first the inhabitants misunderstood the operation, but it soon became popular and received their hearty coöperation.

Additional instructions were issued to the sanitary inspectors and assistants in the following order:

"Sanitary inspectors and assistant inspectors will immediately investigate any case of supposed cholera reported at any hour by any officer of the Metropolitan Police. They will do what may be immediately necessary, professionally, and will give instructions as to the proper method of obtaining medical attendance from the dispensaries, or, if the case require it, of giving admission to hospital, and furnish the necessary certificate. They will at once decide what is necessary in the way of disinfection; and, if the parties be able to procure and employ the necessary articles themselves, the in-

¹ Twenty-nine medical inspectors were appointed for the city of New York, and eight for the city of Brooklyn.

spector will give them detailed instructions regarding the same, and make a reinspection of the premises six hours later, to ascertain if his instructions have been carried out. In any case where the parties are unable to procure and employ the necessary articles, the inspector will at once apply at the nearest police station, and through the officer in charge telegraph to this office that disinfection is necessary at said premises, giving accurately street, number, room, etc. He will then reinspect after six hours, and ascertain whether the proper action has been taken. Every inspector will promptly report his action at the office in person, by telegraph, or in writing."

"Sanitary inspectors and assistant inspectors will keep notes of every case of cholera investigated by them until either recovery or death takes place, and will then promptly report the result to this office in writing if recovery, by telegraph, if death." The inspectors in the country districts were instructed to "forward to this office a written report upon each case of supposed cholera investigated by them, whether proved to be genuine or not, within twenty-four hours subsequent to said investigation."

The inspectors were also called together at the office of the Superintendent once a week, and a more full understanding of their duties and responsibilities obtained, especially from various practical suggestions which occurred to them while in the performance of their duty. They were especially instructed to make thorough inspection of premises where any case of cholera occurred, to visit every family residing on or near said premises, and inquire carefully for any premonitory symptoms resembling those of cholera, and on finding such, to give advice; and, if necessary, treatment—to extend such investigation throughout a block, or as much further as, in their judgment, the situation and circumstances required; to repeat these visits from time to time during the week or two following the occurrence of a case, so as either to be sure that no second case was to appear, or, in case of such appearance, to meet it promptly.

The practical application of disinfectants was soon reduced to a simple system, which was followed in every case and with apparently satisfactory results. Whenever a dispatch was received at the central office that disinfection was needed at any house, Mr. Christie was notified, a wagon loaded with the requisite material, and the men at once sent to the spot. The officers and men of the police force were most prompt in their coöperation, and the disinfecting men were usually at work on the premises within an hour from the time at which the dispatch was forwarded from the station-house.

The plan of disinfection already described has given entire satisfaction as regards the dejections, clothing, and other immediate surroundings of the patient; but frequently the recurrence of successive cases in tenement houses showed that the power of such measures was too limited, and, at an early date, general fumigation of such buildings was resorted to either with chlorine, or sulphurous acid gas. The process was this: All tenants were removed from the house, being allowed to take out nothing more than the clothing then upon them. All the windows and chimneys were closed. The gas

was then set free in quantity—if chlorine, by the addition of sulphuric acid to chloride of lime; if sulphurous acid, by the burning of sulphur in large open pans supported by long iron legs. The men employed commenced the process on the upper floors, and descended, leaving the pans in operation on the different floors, and finally closed the street door. The house thus filled with the gas was left undisturbed for from eight to twelve hours. It was then opened and freely aired, and finally the tenants allowed to reoccupy.

The first house treated in this manner was an emigrant hotel in the lower part of State Street. Three cases of cholera occurred in this house within a period of thirty-six hours, and a large number of boarders were attacked about the same time with severe diarrhoea. The proprietors were notified that all guests must leave, and the hotel be closed. This was promptly done. The house was then thoroughly fumigated with chlorine, and kept so for twenty-four hours, when it was opened and aired. It was then cleaned throughout, and the walls freely whitewashed. At the end of ten days, the hotel was reopened, and very soon crowded with lodgers. No case of cholera or other disease of any moment has occurred there since.

Subsequently a large number of houses were fumigated after cholera had occurred in them. Sometimes chlorine was the agent, and at others sulphurous acid. They have proved equally satisfactory, though in far the larger number the latter was used. In the great majority of instances, fumigation has been followed by immunity from the disease. In a few, however, cases have occurred subsequently to the process, but they have seemed the result of renewed exciting causes. The evidence is strong that the adjuvants of cholera, such as impure air and improper food, which encourage the development into actual disease of the prevailing disposition; and, second, those direct agents in its propagation, such as the dejections of patients, can be controlled and even destroyed by a strict enforcement of cleanliness and the prompt use of disinfectants; and the mortality may be restricted to the minimum, which is due to the presence of the cholera poison proper. If these conclusions are just, it must be inferred that while the cases of cholera, which have occurred the past season, have been of the severest and most unyielding type, yet the infection has not been largely present. That the epidemic, if such it may be called (which might, if left unrestrained, have grown indefinitely), has had comparatively but a feeble foundation, and so has been more readily controlled.

Throughout the whole season not an officer nor an employé of any of the four hospitals has had the disease. A few have had severe attacks of diarrhoea, which have yielded readily to ordinary treatment, and, finally, every one who has been employed, has left the hospital in as good health as when they came. The most rigid cleanliness, and constant and careful use of disinfectants, have been enforced. All dejections were either received at once into vessels containing a sufficient amount of disinfectant (sulphate of iron), or the latter was immediately added. Soiled bedding, or clothes were at once removed and put in soak in a solution of permanganate of potassa—one ounce to five gallons of water. The walls of the wards were always kept freshly

whitewashed, the wash containing a small proportion of the chloride of lime, and the floors were frequently scrubbed with the latter, and some of the same placed in various parts of the rooms and halls. For further details I refer to the reports of the officers in charge.

NEWS ITEMS.

NEW YORK.

(From our Special Correspondent.)

THE NEW BOSTON "MENTAL CURE" has reached New York, and those "cranks" who have exhausted the virtue of hot water and spectacles, are now submitting to the laying on of hands.

A STATE EXAMINING BOARD.—There seems to be a strong probability that the new law, which requires a State examination by the Regents, will be passed, in spite of the fact that the eclectics and homeopaths claim that they will not be properly represented in the Board.

THE CABLE ROAD AND UNDERGROUND WIRES.—Much discussion has arisen in regard to the new cable road that it is feared may be built, and the laying of telegraph wires beneath the street surface. Many affidavits of medical men have been presented by the counsel opposed to these enterprises. There is an almost general opposition to the tearing up of the streets this summer in face of the approach of cholera. The Board of Health have come out with a protest, and it now looks as if the pavements of the city would not be disturbed.

GENERAL GRANT.—The papers are filled with the case of General Grant, and some of the reports, despite the sad nature of the subject, are ludicrous in the extreme, and the active mind of the reporter has found vent in glowing descriptions of the doctors, the visitors, and the family of the illustrious sufferer. The bulletins recall the death of the late President Garfield, and many of them are as grandiloquent and meaningless.

MONTREAL.

(From our Special Correspondent.)

MEDICAL ARRANGEMENTS IN CONNECTION WITH THE NORTHWEST REBELLION.—There has been great activity lately in military circles owing to the half-breed rebellion in the northwest. Regiments have been hurried off to the scene of action rapidly, and hence not thoroughly equipped. The medical department was found very inefficient, and needed thorough reorganization. Dr. Bergin, M.P., has been appointed Surgeon-General, and Dr. T. G. Roddick, Prof. of Clinical Surgery in McGill University, is to proceed to the northwest immediately as Deputy Surgeon-General, and to have complete control of the hospital arrangements. He takes up with him materials for the equipment of base and field hospitals, and also a large staff of medical men and dressers. It is expected that a force of 10,000 men will be needed to put down the uprising. Most of these men being unaccustomed to campaigning, the season of the year being unfavorable, and the distance so enormous, it is expected that a large number will require treatment in hospital. The appointment of Prof. Rod-

dick as principal medical officer to the expedition is a guarantee that the sick and wounded will be well cared for, and has given great satisfaction to the profession.

CONVERSAZIONE AT THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—A conversazione was given at the College of Physicians on Thursday evening. The guests were received by the President, Dr. Da Costa.

Drs. Weir Mitchell and E. T. Reichert exhibited specimens of snake poisons and drawings showing their effects. Drs. Shakespeare and Formad exhibited apparatus for sterilizing organic infusions, various cultures of bacilli, and the bacilli of tuberculosis and of cholera. The circulation of the blood, and the various forms of bacilli were also shown by the lantern microscope.

THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.—Dr. George M. Sternberg, U.S.A., delivered an address before this Society last night on "The Pneumonia-coccus of Friedlander," which constituted one of the most important contributions which has yet been made to the subject of "disease germs."

MEDICAL SOCIETY MEETINGS.—The thirty-sixth annual meeting of the American Medical Association will convene at New Orleans on Tuesday, April 21st, under the presidency of Dr. Henry F. Campbell, of Georgia.

The Louisiana State Medical Society will meet at New Orleans, and the South Carolina Medical Association at Charleston, on Tuesday, the 21st instant.

The Arkansas State Medical Society will hold its annual session at Little Rock on Wednesday, the 22d instant.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 7 TO APRIL 13, 1885.

BROWN, HARVEY E., *Major and Surgeon*.—Leave of absence extended two months.—S. O. 83, A. G. O., April 11, 1885.

BIART, VICTOR, *Captain and Assistant Surgeon*.—Leave of absence extended six months on surgeon's certificate of disability.—S. O. 77, A. G. O., April 4, 1885.

COWDREY, STEVENS G., *Captain and Assistant Surgeon*.—From Department of the East to Department of Missouri.—S. O. 77, A. G. O., April 4, 1885.

DE LOFERE, AUGUSTUS A., *Captain and Assistant Surgeon*.—From Department of the East to Department of Dakota.—S. O. 77, A. G. O., April 4, 1885.

CRAMPTON, LOUIS W., *Captain and Assistant Surgeon*.—From Department of the East to Department of the Platte.—S. O. 77, A. G. O., April 4, 1885.

TORNEY, GEORGE H., *Captain and Assistant Surgeon*.—From Department of Missouri to Department of the East.—S. O. 77, A. G. O., April 4, 1885.

ARTHUR, WM. H., *First Lieutenant and Assistant Surgeon*.—From Department of the Platte to Department of the East.—S. O. 77, A. G. O., April 4, 1885.

WYETH, M. C., *First Lieutenant and Assistant Surgeon*.—From Department of Dakota to Department of the East.—S. O. 77, A. G. O., April 4, 1885.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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